DOCUMENT RESUME

ED 469 693 CE 083 983

AUTHOR	Condelli, Larry; Castillo, Laura; Seburn, Mary; Deveaux, Jon
TITLE	Guide for Improving NRS Data Quality: Procedures for Data Collection and Training.
INSTITUTION	American Institutes for Research, Washington, DC.
SPONS AGENCY	Office of Vocational and Adult Education (ED), Washington, DC. Div. of Adult Education and Literacy.
PUB DATE	2002-06-00
NOTE	86p.; Prepared for the project: Promoting the Quality and Use of National Reporting System (NRS) Data.
CONTRACT	ED-01-CO-0026
AVAILABLE FROM	For full text: http://www.nrsweb.org/traininginfo/dataquality.pdf.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	EDRS Price MF01/PC04 Plus Postage.
DESCRIPTORS	Accountability; *Adult Education; Audits (Verification); Compliance (Legal); Data Analysis; *Data Collection; Definitions; Educational Policy; Evaluation Methods; Federal Programs; Followup Studies; Guidelines; Information Utilization; Measurement Techniques; *Outcomes of Education; Performance Factors; Policy Formation; Program Evaluation; Program Improvement; Public Policy; *Quality Control; Staff Development; State Action; Systems Approach; *Training Methods
IDENTIFIERS	*Data Quality; *National Reporting System for Adult Education

ABSTRACT

This guide for improving the quality of National Reporting System for Adult Education (NRS) data through improved data collection and training is intended for local providers and state administrators. Chapter 1 explains the guide's purpose, contents, and use and defines the following components of data quality: objectivity; integrity; transparency; reproducibility; and utility. Chapter 2 discusses why good data matter, the relationship between quality data and program improvement, and data quality and use at the federal level. Chapter 3 analyzes the local program data process as a system. It offers a model data collection process, reviews the key components of the model, and presents the main processes required to put a quality data collection system into place and keep it operating effectively. Chapter 4 reviews the procedures for collecting each of the core NRS outcome measures, explains survey and data-matching procedures, reviews intake and goal-setting procedures, and discusses procedures for training local program staff to collect NRS measures. Chapter 5 reviews state responsibilities in the NRS that are essential to collecting quality data, including state assessment policies, follow-up methods, training, and data auditing. The concepts covered are illustrated through indicators of performance, self-evaluation forms, 10 sample data tables, and case studies and vignettes. (MN)

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Guide for Improving NRS Data Quality: Procedures for Data Collection and Training

National Reporting System
for Adult Education

Division of Adult Education and Literacy
Office of Vocational and Adult Education
U.S. Department of Education

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June 2002

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This guide was prepared for the project:

Promoting the Quality and Use of National Reporting System (NRS) Data

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Contract # ED-01-CO-0026

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Chapter I. Introduction and Overview

Everyone who works in education is well aware that we are in an era of accountability. Like never before, schools and teachers must demonstrate how their instruction and services have affected student outcomes. In many cases, the very existence and funding of an education program depends on its ability to demonstrate successful outcomes. To the traditional tools of teaching, such as the blackboard, chalk and books, we now must add the computer and the database.

In adult education, accountability is defined through the National Reporting System (NRS), an outcome-based reporting system established to meet the requirements of Title II of the Workforce Investment Act (WIA), which authorizes a state grant program for the delivery of adult basic education (ABE), adult secondary education (ASE) and English as a second language (ESL) instruction. The NRS defines outcome, participation and student descriptive measures, specifies the methodologies through which local providers are to collect these measures and establishes state reporting requirements. Exhibit 1-1 summarizes the core (required) and optional NRS outcome measures and definitions.

Exhibit 1-1
Summary of NRS Measures and Definitions

Topic	Measures	Categories or Definitions
Core Outcome Measures		
Educational Gains	❖ Educational gains	❖ Educational functioning levels in reading, writing, speaking and listening and functional areas.
Follow-up Measures	❖ Entered employment	❖ Learners who obtain a job by the end of the first quarter after exit quarter
	❖ Retained employment	❖ Learners who remain employed in the third quarter after program exit
	❖ Receipt of secondary school diploma or GED	❖ Learners who obtain a GED, secondary school diploma or recognized equivalent
	❖ Placement in postsecondary education or training	❖ Learners enrolling in a postsecondary educational or occupational skills program building on prior services or training received
Core Descriptive and Participation Measures		
Demographics	❖ Ethnicity	❖ American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Black or African American (non-Hispanic), Hispanic or Latino, White (non-Hispanic)
	❖ Gender	❖ Male, female
	❖ Age	❖ Date of birth
Status and Goals	❖ Labor force status	❖ Employed, not employed, not in labor force
	❖ Public assistance status	❖ Receiving or not receiving assistance
	❖ Rural residency	❖ Rural, not rural
	❖ Disability status	❖ Disabled, not disabled

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Exhibit 1-1 (Continued)
Summary of NRS Measures and Definitions

Topic	Measures	Categories or Definitions
Core Descriptive and Participation Measures (Continued)		
	❖ Learner main and secondary reasons or goals for attending	❖ Obtain a job, retain current job, improve current job, earn a secondary school diploma or GED, enter post-secondary education or training, improve basic literacy skills, improve English language skills, citizenship, work-based project learner goal, other personal goal
Student Participation	❖ Contact hours	❖ Number of hours of instructional activity
	❖ Program enrollment type	❖ ABE, ESL, ASE, family literacy, workplace program, homeless program, correctional facilities, community corrections programs, other institutional program
Secondary Outcome and Student Status Measures (Optional)		
Employment	❖ Reduction in receipt of public assistance	❖ Students whose TANF or equivalent public assistance grant is reduced or eliminated due to employment
Work-based Project Learner Achievement	❖ Met work-based project learner goal	❖ Achieved skills for work-based project learner activity (activity of at least 12 hours and no more than 30 hours of instruction to teach specific workplace skill)
Community	❖ Achieved citizenship skills	❖ Achieve the skills needed to pass the citizenship exam
	❖ Voting behavior	❖ Learner registers to vote or votes for the first time
	❖ General involvement in community activities	❖ Learner increases involvement in community activities
Family	❖ Involvement in children's education	❖ Learner increases help given for children's school work, contact with teachers to discuss education, and involvement in children's school
	❖ Involvement in children's literacy-related activities	❖ Learner increases the amount read to children, visits libraries, or purchases books or magazines for children
Student Status	❖ Low income status	❖ Low income, not low income
	❖ Displaced homemaker	❖ Displaced homemaker, not displaced homemaker
	❖ Single parent status	❖ Single parent, not single parent
	❖ Dislocated worker	❖ Dislocated worker, not dislocated worker
	❖ Learning disabled adult	❖ Learning disabled, not learning disabled

The Office of Vocational and Adult Education (OVAE) of the U.S. Department of Education developed the NRS through a collaborative process with state directors of adult education, other literacy providers, and WIA-defined partner agencies. Through a series of projects, OVAE established overall requirements and guidelines for the system (*Measures and*

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Methods for the National Reporting System for Adult Education: Implementation Guidelines, March 2001); set the procedures for the follow-up survey (*Guidelines for Conducting the Follow-up Survey*, March 2001); sponsored a national training conference and developed state training materials to introduce the NRS (*National Reporting System Professional Development Materials*, July 1999); and developed a web-based training site, *NRS Online*.

The focus of this past work was on creating the NRS, informing adult education providers of its requirements and providing initial training on implementation. Now that the NRS is operational, states have some experience implementing procedures and collecting NRS measures. The focus of NRS activities now is to improve the quality of data collected by local programs and to promote the use of NRS data for program management and improvement at the state and local level. To this end, OVAE began a new project in the fall of 2001, *Promoting the Quality and Use of NRS Data.*

Purpose of This Guide

While all states and adult education programs are now implementing the NRS, the level of understanding of the system and the state and local procedures in place for collecting NRS data vary substantially. This variation and lack of standardization affect the quality of NRS data and limit its use as indicators of the adult education program and for program improvement. The purpose of this *Guide for Improving NRS Data Quality* is to provide practical, easy to understand information and materials for state and local staff that clarify the data collection process and explain NRS procedures for ensuring the collection of quality data. The guide is also designed to help local and state adult education program staff:

1. Identify the factors that contribute to quality data at each step of the data collection process;

2. Distinguish between quality data and poor data;

3. Identify problems and strengths in their data collection processes;

4. Identify strategies to improve their data collection; and

5. Understand how to use data for program improvement.

The content of the guide assumes a basic knowledge of the NRS measures and procedures. It does not provide a comprehensive review or explanation of NRS policy and requirements, but focuses on the collection of the measures most critical to the NRS: the core outcome measures of *educational gain*; the *follow-up measures* (entered employment, retained employment, receipt of secondary credential and placement in postsecondary education); *intake and goal setting*, since this process affects the follow-up measures; and the *data collection process*. It also reviews training and professional development needs for implementing the NRS and the state role in setting data policies.

Components of Data Quality

The focus of this guide is to help programs and states improve their understanding of, and procedures for, collecting data in the NRS framework. Following these procedures will improve the overall quality of data within the NRS. Underlying the model of data quality used in this guide are the basic measurement concepts of reliability—following the same procedures consistently over time—and validity—ensuring the measures truly represent their underlying concepts. Other components of data quality the guide reflects include:

- **Objectivity.** Quality data are information that is accurate and unbiased and presented in a clear, complete, well-documented manner. Objectivity is achieved by using appropriate data sources and sound analytical techniques, by using proven methods, and by carefully reviewing the content of all information and reports.

- **Integrity.** Data with integrity is information that is not compromised through corruption or falsification.

- **Transparency.** Transparent data involve having a clear description of methods, data sources, assumptions, outcomes, and related information that allow users to understand the data.

- **Reproducibility.** Quality data can be reproduced by others by using the documented methods, assumptions, and data sources to achieve comparable findings.

- **Utility.** Quality data are information that is useful and available to its intended audience.

The requirements, recommendations and examples in this guide will help state and local programs improve their data quality within each of these dimensions.

Users of This Guide

Improving data quality requires making change at the source, where data are actually collected. Consequently, this guide is designed for adult education staff who are directly on the front lines of data collection—local program staff who instruct students, assist them in setting their goals, assess them and track their outcomes. Local program staff members not only collect the data that are the basis for the entire delivery system, but they also can benefit the most from using the data they collect. Improving data collection at the local level is the key to improving quality in the NRS and use of NRS data for program improvement.

The state plays a major role in the NRS, as it is responsible for setting policies, providing training to local staff and monitoring data collection at the local level. State staff can use the guide to evaluate whether the state has procedures and policies that promote quality data and conform to NRS requirements. The guide also provides detailed guidance on how to review local program procedures to ensure collection of quality NRS data.

Staff development professionals and others who train local program staff on data collection will also find the guide useful. It provides step-by-step procedures on setting up a data collection system for collecting NRS measures that can be used as content in training on the NRS. The guide contains procedural self-evaluation forms that can be used as training tools to raise awareness of data collection issues.

Overview of the Guide

The next chapter of this guide, *Quality Data: Why Good Data Matter,* discusses the importance of collecting data, addressing the issue of *why* collecting quality data is important. Its main purpose is to demonstrate that collecting and reviewing data are valuable, essential activities of program management, not just "completing some meaningless forms for the state." The chapter begins by defining data, explaining how programs and states can use data for program improvement and provides a model relating data quality and data use. The chapter also explains the importance of data quality at the federal and state levels.

Chapter III, *The Data Collection Process*, analyzes the local program data collection process as a system. It offers a model data collection process, and reviews the key components of the model that are essential to producing quality data. The chapter also presents the main processes needed to put a quality data collection system in place and maintain its effective operation.

Collecting NRS Outcome Measures, Chapter IV, reviews procedures for collecting each of the core NRS outcome measures: educational gain and the four follow-up measures. The section on follow-up measures explains both survey and data matching procedures. The chapter also reviews intake and goal setting procedures and discusses procedures for training local program staff to collect NRS measures.

The final chapter, *The State Role in Data Quality*, reviews state responsibilities in the NRS that are essential to collecting quality data. Issues discussed in this chapter are state assessment policies, follow-up methods, training and data auditing. The chapter also offers suggestions on ways to provide local program oversight.

To enhance the use of this guide as a technical assistance tool, Chapters III through V illustrate the concepts covered in each chapter in four additional ways:

- **Indicators of performance.** This section offers methods for reviewing data collection procedures for each measure and process. These methods will help gauge whether procedures are working well and identify problem areas.

- **Self-evaluation forms**. The self-evaluations follow the discussion of each substantive topic and contain checklists of the policies and procedures to use to enhance data quality, worksheets for identifying areas of strength and weakness and a planning chart to help plan improvements.

- **Sample data tables**. Following the discussion of most topics, we provide sample data tables, highlighting issues and potential problems discussed in the section. The tables illustrate how you can use data to pinpoint problems and understand whether data collection procedures are working as intended.

- **Case studies and vignettes.** Each section offers a real example of how a local adult education program or a state addressed the issues discussed in the section to improve data quality.

Case studies contain contact information to allow you to obtain further information on the issue.

Chapter II. Quality Data: Why Good Data Matter

An accountability system, such as the NRS, relies on quality data for its integrity. Collecting and transmitting data is both an art and science that most literacy programs need help developing. The questions that public and private supporters have today about the literacy programs they support can only be answered with data. Program staff that hopes to improve its programs must have data to analyze for decision-making. No one wants to worry about the accuracy of the data when making programmatic or funding decisions, so it is crucial to have quality data.

Before we get into the details on *how* to collect quality data, we begin by discussing *why* data quality is important. We define data, discuss why program staff sometimes guess wrong about the effect of their programs and point out how data can help improve a program. We present a model to demonstrate the relationship between data quality and program improvement and conclude with a brief overview of the big picture: NRS data flow. We trace how data move from the classroom to the federal level and how the U.S. Department of Education needs quality data to manage and obtain federal support for adult education. This chapter also supplies examples of how various stakeholders use data and provides brief vignettes of programs that have become adept at different aspects of collecting accurate data on thousands of students each year.

Data Defined

Data are Information

Quite simply, data are valuable because they represent information. Webster's dictionary defines data as "factual material used as a basis for discussion or decision: information." In an adult literacy program, data are information about how your students perform, how long they attend and what works in your program. Good data are information that will help answer questions you and your staff have about recruitment and retention, the effectiveness of your program and its components. Data are a student's pre- and posttest scores, a student's goals, the number of hours a student attends class or the number of students who drop out. If a program's administrators, teachers or supporters are curious about the types of students who drop out or make great or poor gains on tests, they must collect demographic data. These data—age, employment status, family status and educational attainment—are crucial to any effort to analyze patterns to pinpoint areas of strength and weaknesses.

Data Often Surprise...And Clarify

It is not uncommon for the staff of a literacy program to be surprised by what good data reveal about their efforts and beliefs. When staff analyze data, such as pre- and posttest results or the average number of hours of instruction received by students, there is usually some evidence that supports a staff's belief that the students are learning and attending. The numbers often show, however, that some types of students are doing better than others, some do not attend

frequently, some types of instruction produce better results or the gains students are making are not as great as the staff had assumed.

That this is so is not really a surprise. People who work in helping and teaching professions, and literacy programs are often both, are usually optimists who believe in the individual. They are also realists who are trying to help people overcome overwhelming odds or years of poor, or no, instruction or treatment. As realists, they do not expect everyone to succeed and tend, as optimists, to see most clearly the small and large achievements of their students, some of which are not academic achievements. The staff is urged to tell the success stories to public and private supporters, who for years were satisfied by those stories. Funds continued to flow and these funds, and the continued success of individual students, confirmed to program staff that they were doing good work.

The problem is that anecdotes can obfuscate the larger picture. There is a tendency to believe that these stories represent the whole picture. In this era of accountability for all education programs, anecdotes and personal success stories are no longer enough. They cannot tell you, for example, what type and size of growth you can expect and what percent of your students should achieve this type of growth. When programs begin to measure results for all participants, they are inevitably surprised. Data clarify, as the accompanying vignettes illustrate.

Quality Data and Program Improvement

When you discuss how you would answer "would it make a difference" questions and other issues, program staff inevitably sees the need for test scores, demographic data, hour of attendance summaries and other kinds of information, otherwise known as data! Accurate NRS data can help a program improve its enrollment, increase retention and improve student outcomes.

Sometimes just attempting for the first time to collect data leads to program changes and improvement. All students want to know if they are making progress. All teachers and program managers usually want to know if their program is working as designed or if it needs to be redesigned. NRS data can indicate whether students are staying long enough to make gains and the types of students who make these gains. An analysis of NRS data can help pinpoint at which levels students seem to make the most progress. If the program database has the sophistication, it can help teachers understand the types of students who are making the most progress or dropping out the soonest.

Exhibit 2-1 illustrates the process for using data for program improvement, using advancement of beginning ABE students as an example. The process includes reviewing data to identify issues or problems to address; developing a data analysis and program improvement plan; implementing that plan by adding resources, changing staffing or revising procedures; collecting more data; and reviewing data again to assess whether the changes made a difference.

"DATA CLARIFY:" VIGNETTES

- A large literacy program in New York City emphasized writing instruction along with reading instruction for low level students. The staff believed that reading and writing were linked and that when students become proficient in one skill, they learn the other. When the program's outside evaluator compared the students' writing gains to their reading gains, however, she concluded that gains in writing do not necessarily translate into gains in reading or vice-versa.

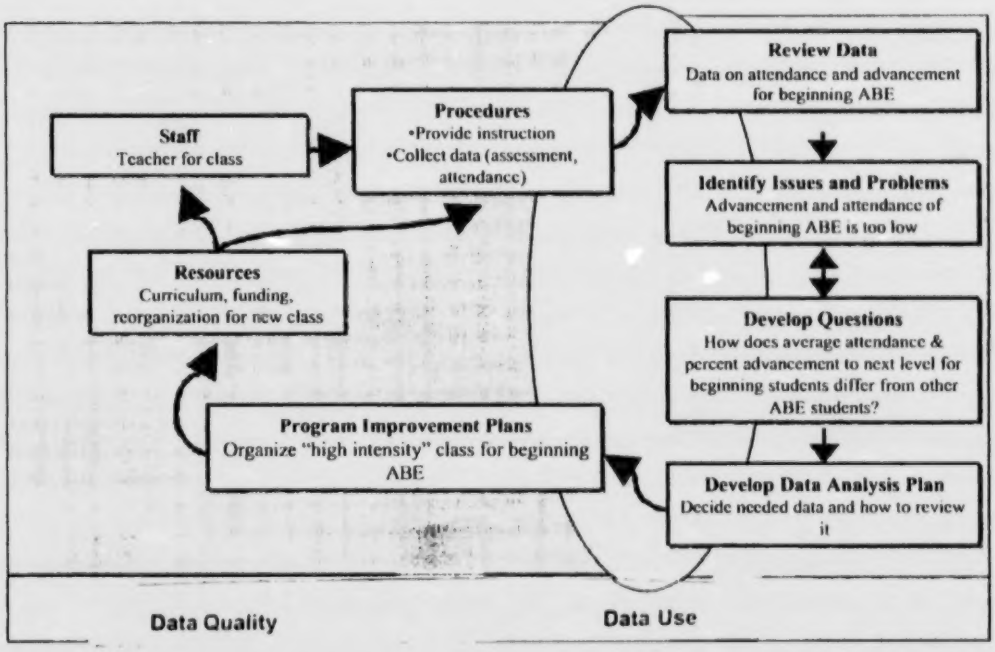
- The staff of a Montana adult learning center had collected mandated data for years but had never used it in a systematic way to assess and improve its program. The staff thought it was serving its students well but when it compared three consecutive years of data, staff realized that many students were exiting before meeting their goal of obtaining a GED.

- A small literacy organization in North Carolina relied on volunteer tutors to provide instruction. The program's staff believed that when students failed to show growth in skills on standardized reading tests, it was the tests that were at fault. When the staff, however, began to track the actual number of hours of instruction that students were receiving over a six to nine month period, they realized there was too little duration and intensity of instruction taking place to get growth.

- The staff in two large, experienced literacy programs in two of Pennsylvania's largest cities always believed that their students did not want to be tested. After being trained and involved in evaluation techniques, both programs began testing some of their students. They quickly learned that the great majority of their students—from beginners to GED candidates—not only wanted to be tested but very much wanted to know their test scores. The programs' sites that initially failed to share the results with the students soon began to do so. There was some evidence that when staff discussed test results with students shortly after the administration of the tests, the students were more likely to stay long enough to be postested.

- A Chicago literacy program in a large community-based organization almost lost funding due to a community and agency rumor that retention in the GED classes was poor. The program manager presented data that proved the rumor untrue.

Exhibit 2-1
Data Quality and Data Use Model


Review Data
Data on attendance and advancement for beginning ABE
Procedures
•Provide instruction
•Collect data (assessment, attendance)
Staff
Teacher for class
Identify Issues and Problems
Advancement and attendance of beginning ABE is too low
Resources
Curriculum, funding, reorganization for new class
Develop Questions
How does average attendance & percent advancement to next level for beginning students differ from other ABE students?
Program Improvement Plans
Organize "high intensity" class for beginning ABE
Develop Data Analysis Plan
Decide needed data and how to review it
Data Quality
Data Use

- **Review data.** The process begins by reviewing data on a regular basis. Data provides you with a picture of how your program is working. By critically evaluating this picture, you can get clues as to what is not working or your curiosity may be raised as to why things are working as they are. For example, why are some students posttested and not others? What makes some groups of students stay longer than others? Why are students more successful in some classes?

- **Identify issues and problems.** Reviewing data is bound to identify program areas that seem problematic or are otherwise worthy of further investigation. You should select and focus on issues and problems to address in your program improvement efforts.

- **Develop questions.** It is helpful to treat the issues you want to address as a research project. To this end, formulate measurable questions based on your analysis of the data. Will changing posttesting procedures result in a higher percentage of students being assessed? Will retention and average instructional hours increase if the program adopts a managed enrollment approach? It is important to specify a measurable outcome that will reflect program improvement efforts. Otherwise you will never know whether your changes worked.

- **Develop data analysis plan.** If you have measurable research questions, you expect the changes you make to be evident in your data. In other words, your data will

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reflect the program improvement efforts you make in your program. You need a plan on how you will analyze these data to determine the effects of your changes. Without a plan you may become overwhelmed and confused about how to interpret your findings—or even fail to collect the information you need to evaluate your changes.

- **Program improvement plans.** Your data have suggested the need to change something in your program, you have made the decision to do so and planned on how you will analyze the data. You should also develop a plan to improve your program to address these issues. The plan should state clearly the resources, staff and procedural changes that you need to change to make a difference.

- **Resources, staff and procedures.** Depending on what you have decided to improve, you may need to devote more resources to the problem, such by increasing funding for data collection; changing staffing or by altering the responsibilities of staff; or changing data collection procedures. Once you implement these changes, you are then ready to collect and review data again to assess the effect of your changes and begin the data—program improvement cycle once again.

Data can inform you by revealing relationships among students and services that promote program improvement, but only good, *quality* data can do so. If your data are collected by staff that are indifferent or unskilled at collecting data, if procedures are not well developed or defined and your program lacks the forms and database to record the information, your data will be suspect. You will have large amounts of missing data, pretests without posttests, incomplete attendance data and missing student demographic data. All of the effort and expense to collect these data will have been wasted and you will not have data to inform program improvement.

Data Quality and Use at the Federal Level

As you consider the role of quality data in improving your own program, it is also important to remember the bigger picture and the role your program's data play in supporting the adult education program at the state and national levels. Just as having accurate, high quality information is the only way you can make informed decisions about your program, the state and federal departments of education need accurate information to understand and manage the adult education program and obtain funding for instruction and services.

State adult education directors, federal staff and literacy advocates use NRS data to report to legislators, other state and federal agencies, corporate sponsors and foundations to support funding and improve programs. The general public and students also have access to this information to evaluate the value of adult education. The source of these data is the local adult education program itself. When considered from this view, the importance of quality data becomes even more critical.

USING DATA FOR PROGRAM IMPROVEMENT: VIGNETTES

- In Montana a local program with multiple funding sources and a recent history of collecting data for program improvement purposes was able to work with state administrators to expand the data fields that the statewide data collection system included. This expansion made it possible for local staff to get answers to their own questions about their programs and to generate reports to some other supporters.

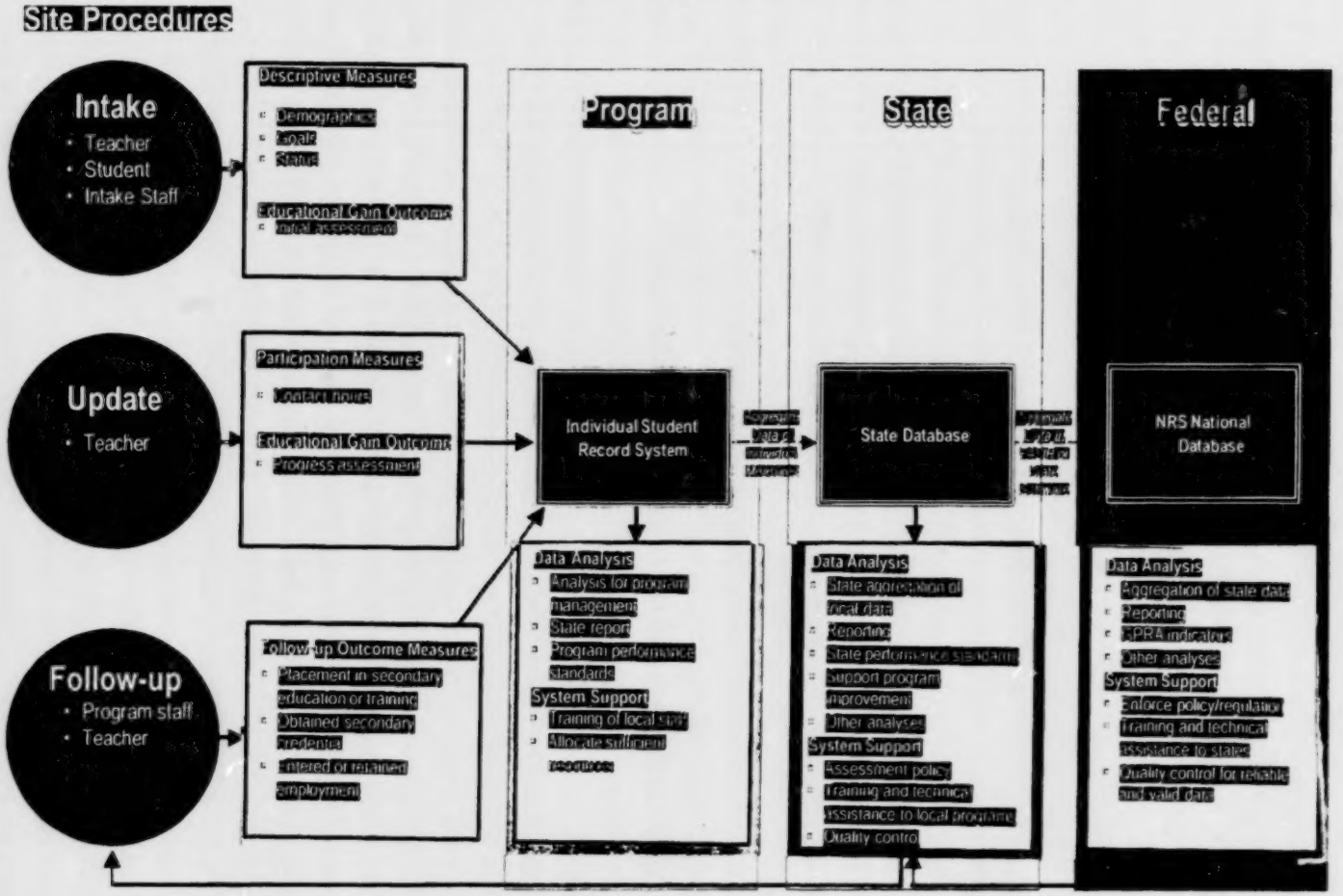
- A large public literacy system in Arizona had a poor posttest rate. Staff started keeping track of student hours of attendance and soon realized they were waiting much too long to administer posttests. A New York City program, which posttested in June, realized that attendance was lowest in June and so it too had a poor posttest rate. Both organizations adjusted and considerably increased the number of students they posttested.

- Once a program has its first year or baseline data, it can work to improve its numbers and publicize its successes. A Pennsylvania literacy organization increased the number of students posttested and the average number of hours of instruction each student received for three consecutive years. Analyzing its data enabled it to determine the minimum number of hours of instruction students needed to start showing progress on standardized tests.

- Pennsylvania's *Project Equal* is the state's comprehensive project to improve data use among local programs. Programs review their data, identify areas for improvement based on the data and form a program improvement team. The team then develops and implements a program improvement action plan, using the indicators of program quality to identify areas to improve. Staff reviews data again after implementing the changes. To help programs, there is a self-assessment guide and training on using data. The program must submit logs on data for decision-making to document the process. Trainers, who give staff feedback, review the logs and assist staff at the local program.

Exhibit 2-2, taken from the *NRS Implementation Guidelines*, illustrates how NRS data flow from the instructional site to the program, the state and finally the federal level. At the local program level, each of the program's instructional sites collects measures from students. During the *intake* process, local staff collects descriptive measures—demographic information, student goals and status measures—and conducts an assessment of the student's educational functioning level for placement. During the course of instruction, program staff (typically the teacher) provides at least two additional measures about the student: contact hours or attendance and a progress assessment or posttest. Other student outcomes attained may also be recorded on the update. Local or state policy determine when this *update* information is collected, which may be on an *ad hoc* basis, or at set times during the year, such as monthly or quarterly.

Exhibit 2-2
National Reporting System Data Flow



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In many states, local programs also collect the core follow-up measures on students. These measures include the employment-related measures, measures on placement in postsecondary education or training and whether the student received a GED or other secondary credential. Local programs must combine all of the measures collected at each instructional site into an individual student database system.

Exhibit 2-2 also shows the movement of NRS data from the local program to the state level. Each local program submits its data to the state education agency to enable the state to develop a statewide adult education database. The state data submission is often on an annual or a quarterly basis, although some states require more frequent submission. This state database may contain aggregated data from local programs or it may consist of the individual student records from programs. At the end of the program year, states must submit the aggregated data in the required NRS data tables to the U.S. Department of Education, which maintains a national database.

One of the main points the exhibit illustrates is that *as the data flow from sites to the federal level, less and less information is available about relationships in the data that reflect the procedures used to collect, verify and report data.* Consequently, it becomes increasingly difficult to evaluate data quality and identify problems in the data collection process. The least information is available at the federal level, which receives only aggregated data tables from the end of a long and complex data collection process. *There is almost no way to pinpoint problems or evaluate data adequately at the federal level.*

Quality must be built into data collection at the source of data—the state and local levels. The remainder of this guide focuses on how local programs and states can critically evaluate methods for collecting NRS data and improve their policies, procedures and training to produce quality data.

Chapter III. The Data Collection Process

There are few endeavors where the expressions "garbage in, garbage out" or "you'll save time by doing it right the first time" are more applicable than they are to data collection. As presented in the previous chapter, data are information that your program can use for improving services to students, that your state can use to manage and improve the state adult education system and fund the best programs, and that the federal government uses to demonstrate the value of adult education within the federal system. Good program practices—as well as funding—depend on accurate and quality information about your program, represented in your data.

The ability of the information or data you have to meet these needs can help you only to the extent they are accurate and reflective of the outcomes and processes they are meant to represent. If data are collected haphazardly, without clear procedures and sufficient resources, the data may not be interpretable or may be wrong—and you will have wasted your time. In more scientific terms, your data collection process needs to produce *reliable* and *valid* data if they are to be useful to you.

Data are *reliable* to the extent that they are collected in the same way, by different people at different times. In other words, no matter who collects the data or when they are collected, they are collected using the same procedures, implemented in the same way. Data are *valid* only to the extent that they represent what they are intended to represent. For example, if you report 40 percent of students to have gained a level according to test scores, those test scores if they are valid, will accurately convey the score and interpretation intended by the test publisher.

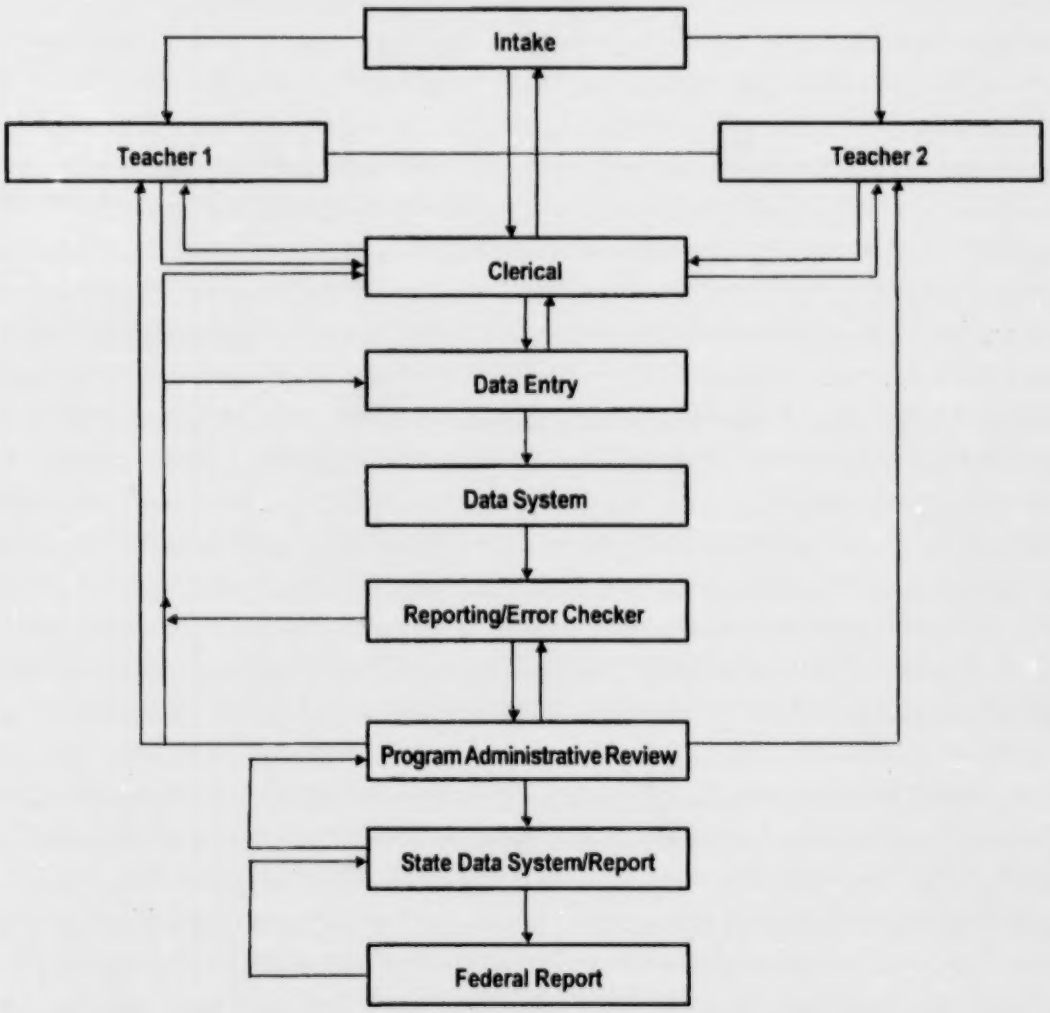
There are three components to collecting valid and reliable data: (1) a well-planned, effective *process*, (2) *resources* to implement the process and (3) clearly defined *procedures* for collecting each measure. In this chapter, we discuss the characteristics of good data collection procedures and ways to implement them in your program. We present a model data collection system and a method for evaluating your data collection process. This presentation also discusses the resources needed to make your data collection process work. The next chapter presents in detail the procedures for collecting key NRS measures for producing valid and reliable data.

Model Data Collection Process

It takes the hard work of many people to collect data—people who know what they are supposed to do and why they are doing it—and people who are committed to doing it right. Like other processes, data collection requires planning and needs constant attention, oversight and fine-tuning, through monitoring, error checking and training. You cannot just set up the process and let it run itself, assuming everything will work out as planned. Inevitably, problems and unforeseen issues will arise, staff may be resistant or new staff will become involved and requirements and circumstances will change. However, with a sound, well planned process, sufficient resources and oversight, you can have a data collection system that produces valid and reliable data that will assist you in managing and improving your program.

While the specifics of individual approaches to data collection vary among programs, Exhibit 3-1 presents a model data collection process, beginning with student intake, through submission of state and federal reports. This model illustrates the key components of a good data collection system and staff roles at each step, which we review here.

Exhibit 3-1
Local Data Collection: A Model



Intake

When students enter the program, intake staff collects many NRS measures, including age, ethnicity, race and gender. Intake often includes a goal setting process, where students, with staff guidance, decide on short- and long-term goals for attending class. If a student selects an NRS follow-up goal, the intake process should allow recording of this information. If the program uses a follow-up survey, the process should include procedures for informing students that they may be contacted after they leave class. Intake staff completes an intake form and sends the forms to clerical staff and/or teachers.

Teachers

Teachers have a large role in data collection in most programs. They must report student attendance or contact time, often assess students, report test scores and sometimes are involved in the goal setting process. In addition, since teachers have direct contact with students, they are often asked to provide student information that was missing or incorrect at other stages of the data collection process. Teachers not only complete forms, but ideally also have a role in reviewing data and reports.

Clerical and Error Checking Staff

The data collection process results in a high volume of paper—forms, test scores, attendance records, surveys—that clerical staff receives and must track. Staff must develop an organized system for managing this paper flow. The process includes receiving forms from other staff for checking and correcting. Once error checkers correct forms, clerical staff then sends forms for data entry.

Data Entry and Data System

One or more staff members must enter information from forms into the program's database. Data entry may occur at an instructional site or the program may have a central data entry point to which all sites submit their forms for key entry. Programs should have an individualized student database that is organized to allow the program to examine relationships among student and program variables, attendance and student outcomes. Once forms are keyed, data entry staff should review error reports promptly and resolve errors and missing data by returning forms to the staff members who collected the problem data.

Reporting and Error Checking

An essential feature of the data collection process must be regular and frequent review of data entered into the data system. The data system should have pre-programmed error reports that allow for a review of inconsistent, out-of-range and missing data. Data entry and clerical staff should regularly review these reports and should return them to teachers, intake workers

and clerical staff to clarify problems and obtain the missing data. Corrections should then be sent to data entry staff so they enter them into the database.

Program Administrative Review

The process should include a regular opportunity for the program director and other program leaders to review data reports. As the person most responsible, the director may often be the only person in the program who can see the "big picture," and thus brings a different perspective to the data review process. This review may raise further questions about data integrity, requiring another round of data checking and verification among the staff. The program director may share data reports with staff as a means to identify problems, track progress and buy staff into the data collection process by demonstrating how data can be used for program management and improvement.

State Data System and Reporting

All local programs send their data to their state agency for integration into the state data system. Some states require submission of individual records, while other states require aggregated report tables. The state combines the individual program submissions into a state report. As part of the data integration process, state staff may identify errors or inconsistencies in local data, initiating another round of data checking, cleaning and data entry by the local program.

Federal Report

All states send their data to the U.S. Department of Education (ED) annually, using the NRS data tables. ED then creates a national report and submits the report to the U.S. Congress and uses the data in determining state performance incentives. Prior to creating the national report, ED reviews each state's data tables for errors and inconsistencies and asks for corrected data tables from states, as needed. In turn, states may once again need to review local program data to correct data problems and contact local program directors for corrections. Local staff then needs to identify problems and correct errors and resubmit data to the state, which then provides corrected tables to ED.

Summary: Two Key Concepts

The discussion around the model data collection process, as represented in Exhibit 3-1, identifies two key characteristics central to the success of a good data collection system. First, the process requires many people to work together as a team. Each point of the process represents a staff person who has a definite role in data collection. Each person must know his or her job and do it right. Ideally each staff member will also accept responsibility, as a member of the team, for fulfilling his or her role. The team makes the process work, which includes collecting and recording accurate and timely information, submitting the information to the next staff person in the process and reviewing and correcting information that is missed or erroneous.

The second characteristic of a good data collection process is that it is iterative, with many checkpoints and feedback loops. There are frequent checks on the data—when forms are first completed, after data entry, prior to report submissions—and several opportunities to improve data integrity. At each checkpoint, there is a staff member who has the responsibility and authority to correct the data. In addition, several different levels of staff review the data—clerical and data entry staff, teachers, program directors, state and federal staff. This iteration and review by staff internal and external to the process produces quality data.

Improving a Data Collection System

A serious mistake many programs make is to set up the structure of a data collection process—including forms and a database system, provide a quick training to staff, and then assume the process will just run itself. As many programs and states quickly learn, this approach to data collection is doomed to failure. Yet once you discover problems, it may seem to be an overwhelming task to change your system.

A data process that collects quality data is well planned, has staff members that are well trained and who know their roles and responsibilities, and have needed tools and resources. A quality system also has oversight to monitor its operation and identify problems promptly. Here we review the processes needed to implement or improve a successful data collection process, as demonstrated in Exhibit 3-1, that is likely to produce valid and reliable data for your program.

Collaborative Planning

Obtaining accurate data is possible when you plan well and motivate your staff to want to collect it. You have to build staff motivation and interest to get the buy-in that produces quality data—and obtaining buy-in requires collaborative planning.

A planning group that involves all types and levels of staff will begin the buy-in process. The members of the planning group must understand what the NRS requires and formulate what assessment or program improvement questions the staff may have. Other planning steps include:

- Develop a clear, written rationale for data collection that addresses what data are to be collected and for what purpose, reports that are needed and confidentiality issues. Use the plan to build consensus in the organization.
- Clearly describe data collection procedures, including roles and responsibilities for all staff.
- Specify error-checking procedures and which staff will perform them.
- Create a schedule to conduct periodic checks of the accuracy of the data.
- Set deadlines for each step in the development process of the data collection system.

Your plan should also recognize that it will take time—often two years—to get a system that works well.

Context—Why and for What Purpose?

It is critical that staff knows what data are collected and how data will be used. An attitude such as "because we have to for our grant" is insufficient and will not result in quality data. Consequently, your program should develop well thought out plans on how you will use data. Consulting with staff as you develop these plans will improve interest further. When staff members know that data are used for a meaningful purpose—to improve instruction to students, for example—they are likely to take more care in the data collection process.

Holding regular, interactive staff meetings and training on how data are used will reinforce staff buy-in and help develop the skills staff needs to collect good data and interpret it. These activities are the best way to deal with the "show me it will make a difference" attitude that is often a barrier to institutionalizing data collection procedures.

Staff Knowledge

All staff members must know their role in data collection and the specific procedures they are to follow to perform their part. You cannot assume procedures are so transparent that staff will implicitly know what to do, especially when there is a problem. To ensure staff is knowledgeable about the process, you should have clearly defined roles with written job responsibilities, written procedures and regular training and interaction of staff on data issues. When staff knows clearly its data collection job, you will be unlikely to hear complaints such as "that's not my job!" or "I didn't know I was supposed to do that."

Resources

Staff inexperienced in data collection often is surprised at the high level of effort the job entails. Consequently, a common mistake is to allocate insufficient resources to the task. Staff members may be asked to find missing data when they "have the time," teachers may have to key data after class and the program director may review data reports on the weekend, for example. While these approaches may not be uncommon, they are likely to produce serious shortcomings in data quality. The only way to get good data is to make data collection a priority, by providing adequate resources in the form of staff, time and money to the task. Other, tangible resources your system needs are forms and a database system.

Monitoring and Oversight

A data collection system is like a living process, requiring perpetual care and attention. However, like other processes, problems arise: staff changes, unforeseen events occur and procedures do not work out as planned. Yet, you will never know whether procedures are working unless you build into the process regular oversight and monitoring of data collection.

A data collection system with valid and reliable data has several opportunities for staff to reflect and revise procedures. Regular formal and informal staff meetings are a good way to discover what is working, as is observation of staff members as they collect data. Frequent reviews and checks of data soon after data entry also provide an opportunity to ensure data are correct.

Summary

Since data collection is tedious and staff often misunderstand or do not know how data are used, there is often a high level of resistance to data collection. The foregoing presentation summarized processes fundamental to designing a data collection process that will result in quality data. Many of the processes will also help address staff concerns and complaints about the data collection process. Exhibit 3-2 lists some common issues raised by staff and the process that will help address these concerns.

Exhibit 3-2
Resolving Staff Concerns and Complaints About Data Collection

Complaint or Concern	Resolution
"What are we supposed to do? How is this going to work?" *"Why doesn't someone ask me— I know what the problems are?"*	**Engage in collaborative planning** to work through the process and get staff buy-in.
"What good is doing this? How is it going to make a difference?" *"What does it matter if I fill this out right— it's just a dumb report to the state."*	**Explain context and purpose of data** so that staff knows how it is used and its connection to program improvement.
"It's not my job—he's supposed to do that."	**Provide knowledge and training** on roles and procedures to avoid confusion about who is supposed to do what.
"I'm a teacher, not a test administrator! I don't have time to do this!"	**Provide sufficient time and resources** for data collection so that staff have time and take responsibility for data collection.
"I missed the training— what am I suppose to do with this? Oh well, I'll just make something up."	**Conduct regular monitoring and oversight** to identify problems on an ongoing basis.

The next section provides a systematic way for you to review your data collection processes, using the principles presented in this chapter.

Evaluating Your Data Collection Process

Your program already has some system for data collection in place and you may have already implemented many or all of the support systems needed to get it started and keep it going. However, a process like data collection is never perfect and most likely, there are some areas that you do well and others that need improvement. The evaluation form at the end of the chapter will help you analyze and assess your data collection procedure and identify areas for improvement.

Data Collection Policies and Procedures

The checklist on the evaluation form provides a systematic way for understanding the data collection process. The annotation below explains each point in the checklist.

1. **Staff has a clear written description and understanding of its roles and responsibilities for data collection.**

   Like it or not, collecting data now involves every staff member in an adult education program. Intake staff may collect student demographic data and goals; teachers report attendance, may administer tests and report other outcomes; administrators must review and make decisions based on data tables; and administrative staff may be involved in checking forms and data entry. Your program should have a clear written description of your data collection process and the role of every individual in that process—and every program staff member should know his or her role. In fact, job descriptions for all staff should incorporate the data collection responsibilities of the job and performance reviews should consider how well staff fulfilled these functions.

2. **Clear definitions for each measure have been established.**

   Just as it is essential that all staff members know their role in data collection, it is critical that they have an understanding of what they need to collect. Your procedures should include a written, precise definition for each data item that is compatible with your state's definitions. Some programs and states, for example, have a data dictionary that defines all measures and categories within measures. While some measures may seem straightforward—ethnicity or sex, for example—others, such as student goal setting, may require detailed explanation. However, even seemingly simple definitions can sometimes need elaboration. For example, it should be clear to staff about how to classify the ethnicity of a student who claims to be part Asian and part White. Such ambiguities make it helpful to customize definitions to your particular circumstances and to include examples of how to resolve ambiguities.

3. **Program uses standard forms, tied to the program database, for collecting data.**

   Staff must record information on intake and other data forms and administrative staff then keys the information from these forms into the program database. Consequently, your program should use standard forms for data collection that include all the data elements and categories your database system uses. Staff should not need, nor be allowed, to enter their own codes or variables, as this will cause data entry errors and hurt reliability and validity. Some states with uniform state database systems have standard forms used statewide for this reason.

4. **Program has an error-checking and quality control system for identifying missing and inaccurate data.**

   In an activity as complex and stressful as data collection, mistakes and missing data are inevitable. Staff may fail to complete forms fully due to high workload or simple oversight. In addition, the required information may not be available when it is needed. All good data collection systems have procedures for checking data for completeness and accuracy at several times during the process. Data checking should follow a regular, prescribed schedule with clear deadlines. It is also a good idea to assign one or more staff persons to perform these data checking functions explicitly and make the job of this person known to all other staff in the program. Data checkers should review all data forms as soon as possible for completeness and accuracy and should receive error reports from the database to check immediately after data entry. To do their job, data checkers must have access to all staff—teachers, intake staff, counselors and administrative staff—and the authority to obtain cooperation from them.

5. **Program has ongoing training on data collection.**

   The best data collection procedures do not result in valid and reliable data unless staff understands and follows them. Therefore, part of your data collection process must include training of all data collection staff on their roles and responsibilities, as well as the importance of data collection. You should provide this training to all staff and it should be offered several times during the year, if possible, to accommodate new staff and to allow existing staff to take follow-up training. It is also a good idea to have regular meetings or in-service trainings on data issues to give staff the opportunities to discuss problems and issues that arise. By addressing these issues promptly, you will avoid more serious data problems later. (See the training sections in Chapter IV and Chapter V for additional guidance on providing training on data collection.)

6. **Program has a student-level, relational database system.**

   To allow you to use data for program improvement, you will need the ability to look at student outcomes and demographics by student according to such variables as the number of instructional hours received, length of time of enrollment, the teachers and classes enrolled and by student educational functioning level. This type of analysis requires a database system that stores information by individual students and allows you to link the different pieces of data for each student in reports or other output, a system known technically as a *relational* database. Your state may have a statewide data system that you use that meets these requirements. If not, your program should invest in such a system to enhance the value and use of the data for you and to allow you to produce required NRS and other reports more easily.

7. **Data entry procedures are clear and timely.**

   Your procedures for data entry should specify at least one person whose job is to enter the information from forms into the program's database. All staff members should know this person's role and he or she should have the authority to request clarification or resolution of errors. In addition, data entry should be scheduled at frequent, regular intervals—such as weekly or monthly. Without frequent data entry, not only will you have a large backlog of forms to enter, but you may not become aware of errors and missing data on forms until it is too late to correct them. Part of the data entry procedures should also include a prompt, organized way to identify and resolve errors. For example, you should print error reports from your database as soon as possible after data are entered and staff should correct errors and resolve missing data as soon as possible after data entry.

8. **Staff has timely or direct access to information from the database.**

   A frequent complaint of staff involved in data collection is that they fill out the forms, enter the data and then never see it again. If staff members cannot access data, they cannot learn how data are used or how they themselves can use it for program improvement and management. Your database system should have the capability for local program staff to access their data in useful ways. It is best if this access is direct, so that staff at the local level can query the database to print a report locally. Access through a third party or through the state will also work for local programs, if they are able to receive the data they request in a timely fashion. The usefulness of the data is limited if it takes weeks or months for program staff to receive data tables.

9. **Staff regularly reviews data.**

   Your data collection procedures should include a regular review of data soon after entry into your database. Regular data reviews allow you to spot errors, missing data and other data that "don't make sense." You can use data reviews as a staff development opportunity to examine problems and issues to support program

improvement. Data can help you and your staff understand issues such as the impact of instructional arrangements, learner retention and learner progress. Having your staff learn to use data may not only foster program improvement, but may improve data quality, as staff sees the importance of data collection to produce valuable information.

Indicators of Performance

Data collection is a complex process, involving many staff. It thus requires regular review and monitoring. You may identify issues to explore further after completing the checklist or reviewing the flow chart in Exhibit 3-1. There are several ways to investigate your data collection process in depth, including discussing processes with staff that is involved in data collection and observing staff members as they do their job. Your program's data can also give you clues about needed improvements to data collection.

Discuss with staff. Talk to all staff members about their understanding of the data collection process to ensure they are clear about what they are doing and the reasons for procedures. You might also ask them for insight into what is not working and what they think they could do better. Through this discussion you might also explore areas of resistance among staff and reasons why procedures are not working as they should. Staff may also have insights into ways to resolve data collection problems. You could use this information to work with staff to identify a plan for improving data collection procedures.

Observe data collection. Observe staff most directly involved in data collection to evaluate whether processes are working as you envision them. For example, observe how data are entered, forms completed and missing or erroneous data are resolved. Identify areas of strength and weakness and discuss with staff.

Review program data. Review your program's data for anomalies, missing data and other inconsistencies to get insight into areas where more training may be needed. You should examine data tables and look at data entered or collected by individual staff members. For example, you could:

- Spot-check data in your database against original data on forms.
- Check for out-of-range values and look for numbers greater than 100% and number of students in sub-samples greater than total enrollments.
- Examine individual student records for missing data and highest and lowest values recorded, to see whether they make sense. Check whether it is possible to obtain these values or scores.
- Examine the above data by individual staff member involved in completing forms or data entry.
- Examine data again after it has been checked and completed.

- ❖ Before you submit them, examine NRS and other accountability reports for missing data, out-of range values and patterns that seem suspect (e.g., advancements with too few hours, too high or too low percentages of outcomes achieved).

When you evaluate these data, consider whether your program's data collection policies and procedures are clear and understandable. If training is not the problem, you need to revisit or better define procedures.

Case Study #1: Local Program Data Collection

Staff at Literacy Volunteers of America-Chippewa Valley (LVA-CV) located in Eau Claire, Wisconsin, found they were collecting too much data—and they had difficulty organizing and using them. At year's end, they found themselves floundering in long, detailed reports from ten individual programs spread out over three counties. What was worse, all were using slightly different recording systems to collect data. This made it particularly challenging to compile program and organization-wide evaluations and to analyze the data. The sheer quantity of data was obscuring the essential information and impeding their progress and ability to share successes and challenges of the students served in their programs. LVA-CV realized they needed to develop a clear and concise data plan that would allow meaningful articulation of its successes and challenges.

The challenge was to pull consistent pieces of information from all segments, record that standardized data accurately in a computerized collection system, consolidate the findings, and produce a report. Staff understood that by first determining what information they needed, they would avoid a lot of wasted time and energy.

LVA-CV developed an efficient and standardized data plan, involving a cycle of collecting, analyzing, organizing, revising, and articulating:

- Examine your organization's strategic plan;
- Determine the questions you need to ask;
- Develop/revise the data plan:
  - ? Define the roles,
  - ? Establish timelines for assessment process,
  - ? Standardize data collection process,
  - ? Revise forms for consistent usage,
  - ? Review testing practices and standardize,
  - ? Strengthen staff communication;
- Aggregate data for reporting; and
- Analyze your data to tell your story.

Although, the staff recognized they would never achieve a perfect system, they realized that efficient standardized data collection was essential to continuous program improvement.

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Adapted from Adventures in Assessment, Volume 13 (Spring 2001).
SABES/World Education, Boston, MA Copyright 2001.
Posted to SABES Web Site: August 2001.

Case Study #2: Local Program Data Collection

The Albany Park Community Center, a community based, non-profit organization in Chicago that provides a range of social services, wanted to consolidate the multiple data reporting forms required by its adult literacy funders and develop a more user-friendly reporting system for the program. Due to problems with databases and data entry, important data were not being combined, compiled, or compared. For example, program administrators could not readily correlate test gains with family literacy outcomes because the databases operated on different platforms making it difficult to import and export key data. In addition, data on learners' native languages and countries, their educational goals, and their satisfaction with the program had never been entered into any computer database because no funder had asked for this data.

The organization realized that it needed to approach program reporting and data collection more systematically. The first step was to develop a plan with all staff members by discussing:

- What to assess (English literacy skills, learner goal attainment, learner satisfaction or persistence)?
- What instruments to use (TABE, CASAS, locally made performance assessment)?
- What kind of data to collect (previous schooling, goals, parent, employment status)?
- When and by whom would the assessments be administered?

Next program administrators identified the staffing expertise and the types of talents available inside and outside the program. These included:

- *Planners*: program administrators, teachers, students, top management (beyond the literacy programs);
- *Database design:* a database consultant;
- *Data entry*: support staff, student volunteers;
- *Statistical compilation and analysis*: program administrators, consultants; and
- *Interpretation and application of results*: teachers, students, other staff, top management.

After a series of meetings over 18 months and experimentation with different databases, staff produced the following work plan.

- Seek input from staff and students on the purposes and uses of evaluation.
- Design of a comprehensive database that can import and export data with some of the funders' reporting system, produces needed table and has a query function.
- Train support staff and program coordinator in use of the database—data entry, forms and queries.
- Involve teachers, students and managers in interpreting the results.

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Sample Data Table #1
Data Collection: Core Follow-Up Outcome Of Obtained A GED Or Secondary School Diploma

Program	Number of Participants with Goal	Number of Participants in Follow-up Sample	Response Rate	Number of Participants Achieving Outcome	Percent of Participants with goal Achieving Outcome
Program 1	4,230	4,230	100%	2,289	**14%**
Program 2	2,233	0	0%	1,291	58%
Program 3	6,300	0	0%	1,735	28%
Program 4	10,162	8,494	81%	5,283	52%
Program 5	28,525	0	0%	7,609	27%
Program 6	6,704	0	0%	1,665	25%
Program 7	2,135	2,135	100%	1,623	76%
Program 8	948	948	100%	349	37%
Program 9	**281**	**304**	**108%**	74	26%
Program 10	135,683	**0**	99%	34,981	26%
Program 11	15,653	9,710	59%	4,424	28%
Program 12	2,359	1,440	53%	**2,459**	**104%**
Program 13	4,965	0	0%	1,828	37%
Program 14	15,331	**NA**	100%	2300	**15%**
Program 15	13,674	13,674	**54%**	6,248	46%

Potential Problems

- Program 10 reports that 0 participants were included in the study, but reports a 99% response rate.
- Program 1 has reported an error, 14% of 4230 is not 2289.
- Program 9 has reported more participants responding at follow-up than as having the goal initially. 108% is an obvious mistake.
- Program 12 has more students achieving the goal then there are students with the goal.
- Program 14 reports a low percentage of students with goals achieving the goal. This percentage may reflect a data entry mistake, a problem with data collection processes, or may indicate a poorly functioning program.

Sample Data Table #2
Data Collection: Raw Data Table by Student

Student	Pretest Score	Posttest Score	Gender	Ethnicity	Age
Carvajal	196	201	1	1	19
Swaminathan	256	259	2	5	**87**
Abul	211	**192**	2	5	24
Rios	184	186	**9**	1	26
Sanchez	136	152	1	1	45
Martinez	237	246	2	1	31
Fabio	220	231	1	**11**	37

Potential Problems

- There is a large drop in Abul's score between pre and posttest. This drop is possible but could indicate data collection or data entry error.
- Gender is miscoded for Rios; this should be checked with the data collector.
- Eighty-seven is an extreme value for the age of a student, may be data entry error.
- Ethnicity is miscoded for Fabio, '11' is an out-of-range value.

DATA COLLECTION PROCEDURES EVALUATION

A. Describe Your Data Collection Procedures

Describe your program's entire data collection process beginning at student intake through submission of state reports. Describe who collects data at each point, how they are collected, data entry procedures and error checking. Also include how your reports are prepared, submitted and reviewed. Then complete the checklist in Part B.

B. Rate Your Data Collection Procedures

Data Collection Procedures Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Staff has a clear description and understanding of its roles and responsibilities for data collection.				
2. Clear definitions for each measure have been established.				
3. Program uses standard forms, tied to the program database, for collecting data.				
4. Program has an error-checking and quality control system for identifying missing and inaccurate data.				
5. Program has ongoing training on data collection.				
6. Program has a student-level, relational database system.				
7. Data entry procedures are clear and timely.				
8. Staff has timely or direct access to information from the database.				
9. Staff regularly reviews data.				

C. Evaluate Your Data Collection Procedures

Identify the aspects of your program's data collection procedures that you are not performing well. Describe your areas of strength and weakness, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of data collection in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completing Corrections
1.			
2.			
3.			

Chapter IV. Collecting NRS Outcome Measures

The heart of the NRS is its outcome measures: educational gain, enter and retain employment, obtain a secondary credential, and enter postsecondary education. States set performance standards for these measures and program effectiveness is judged in part by whether these standards are met. These outcome measures are also a set of indicators that tell you how well students are doing in your program. They can help you evaluate what is working in your program—and what might need improvement. Consequently, collecting these measures in valid and reliable ways is vital to your program.

In this chapter, we focus on the NRS procedures for collecting educational gain and follow-up measures. For each measure, we first present an overview of the measurement procedures within the NRS framework, and then provide a step-by-step explanation of how to collect it. Tied to each measure is a checklist and evaluation form you can use as a self-assessment tool to assess how well your program performs each of the data collection steps. Each section provides suggestions on methods you can use to evaluate your programs' procedures and includes sample data tables to exemplify how you can use data as part of the evaluation process. There is also a case study in each section that provides a concrete example of how to implement the procedures discussed.

This section also includes a discussion and self-evaluation of intake and goal setting and local staff professional development. Effective goal setting is central to the collection of the NRS follow-up outcome data, while the foundation of any data collection is strong staff training in the process. Without effective professional development, your program cannot implement any data collection procedures, no matter how well designed.

Assessment: Measuring Educational Gain

Many program directors, teachers and policymakers believe that the adult education program is first and foremost an educational program designed to teach literacy skills. The Workforce Investment Act affirms this view by explicitly defining student literacy gains as a key outcome measure of the program. For this reason, many adult educators see *educational gain* as the most important outcome measure within the NRS, since it is the measure of student acquisition of literacy skills.

The measure is defined according to NRS *educational functioning levels*, which are determined according to the student's basic or functional skill level. The program assesses the student upon entry into class and places the student into an initial level, according to NRS definitions. After receiving instruction, a student is again assessed at a time according to state policy to determine educational level. If according to the posttest, the student is at a higher level, the student is reported as having advanced an educational functioning level.

There are six educational functioning levels each for ABE and ESL. For each level, there is a set of descriptors that describe student entry level skills in the areas of reading and writing,

numeracy and functional skills for ABE. There are also speaking and listening descriptors for ESL. Each level has a set of benchmarks of commonly used tests as a guide for placement.

The accurate placement of students into educational functioning levels, both initially and upon posttesting, is critical. Such placement is not only good instructional practice, but allows for an accurate measure of educational gain.

Procedures and Policies

To measure educational gain, your program should have the following policies and procedures in place. Use the assessment evaluation form and checklist to rate your program in each area.

1. **Appropriate assessments selected, following state requirements.**

   NRS guidelines require that states select the assessments for all local programs in the state to use. The assessment must either be a standardized test or an alternative assessment procedure that uses standardized scoring rubrics that are valid according to accepted psychometric standards. Many states allow more than one assessment. For example, CASAS or BEST is often used for ESL students, and the TABE is commonly used for ABE students. Some states may also require different assessments for measuring reading and writing. Your program must use the appropriate state required assessment.

2. **Appropriate form or version of the assessment.**

   Assessments designed for multiple administrations on the same students, such as for pre- and posttesting, have different, but equivalent versions or *forms*. The different forms are usually designated by numbers or letters. For example, the TABE has forms 7 and 8; the BEST, a Form A and Form B. A different form must be used for pre- and posttesting, so that students do not remember the items from the previous administration. In addition, some tests such as the TABE have different forms for student proficiency levels, designated as "easy" and "hard," for example. When using such a test, programs *must* follow the test publisher's guidelines in selecting the correct test form for each student.

3. **Established time to administer the initial assessment.**

   The initial assessment is the basis for placing students in an entering educational functioning level according to NRS or state definitions. It is the baseline upon which programs measure student learning gains. Programs should administer the initial assessment to students at a uniform time shortly after enrollment. This time may be set by state policy or by the local program. It is advisable not to administer the assessment during the first few days of class, but within a few weeks of enrollment. Regardless of the date for initial assessment, it should be uniformly applied to all students to make test results comparable across students.

4. **Procedures for placing students in the appropriate level, based on the results of the initial assessment.**

   Using the results of the initial assessment, programs should place students into the appropriate NRS educational functioning level or the equivalent state level. The NRS *Implementation Guidelines* clearly define the criteria for entry into each level, using test scores or the educational level descriptors. Programs do not need to use all of the areas described in the level descriptors to place students, but should use the areas most relevant to the student's needs and program's curriculum. For example, if the student's goal is to improve reading skills, the reading and writing descriptors should serve as the basis for placement. However, if multiple skill areas are assessed and the student has differing abilities in each area, NRS policy requires that the program place the student according to the lowest skill area.

5. **Established uniform time to administer the posttest or follow-up assessment.**

   Just as you must administer the initial assessment to students at a uniform time, you must administer the follow-up assessment or posttest to students at a set time. This uniformity allows for comparability of tests scores across programs. NRS guidelines require your state to set the time for posttesting for the state, which your program is to follow. This time may be after a set number of instructional hours or months of instruction and should be long enough after the pretest to allow the test to measure gains. As noted under point number two, you must posttest with the parallel form of the same assessment as used to place the student.

6. **Procedures for determining level advancement of students based on the posttest or follow-up assessment.**

   Educational gain, the literacy measure reported for the NRS, is determined by comparing the student's initial educational functioning level with the educational functioning level determined through the follow-up assessment or posttest. In determining gain, you must use the *NRS Guidelines* definitions, which use test scores and skill descriptors. If your state has other, equivalent criteria, use them to determine educational gain. For example, if a student initially scored 510 in reading on TABE 7 and later scored 550 in reading on TABE 8, the student would advance one level, from ABE low intermediate to high intermediate ABE. Likewise, an oral BEST score from 25 initially to 45 on posttesting moves the student from beginning ESL to low intermediate ESL. It is important to note that *if a student is not posttested, no advancement can be determined for that student.* The student must remain in the same level as initially placed for NRS reporting.

7. **Staff trained in administration of the assessment, including timing of assessment, scoring and providing feedback to students.**

   The results from a standardized test are only meaningful if staff follows the procedures for proper administration of the assessment. These procedures include the steps outlined above—i.e., use of the correct form of the assessment and administration at the proper time—and also include following the publisher's procedures for giving directions to students, timing of the assessment and not

providing help to students. Assessments should also be administered under good conditions—in a well-lighted, quiet room, for example. It is advisable that staff other than the student's teacher administer the assessment. Your program must provide training to all staff who administer tests on the correct administration procedures. Such training should be provided on an ongoing basis to accommodate new staff and as a refresher to staff who had earlier training.

Indicators of Performance

If you uncover problems with your program's assessment procedures, or you want to investigate procedures, you can discuss procedures with staff and observe staff, review student records or examine your program's data. The following methods give you a good indication of how well staff has followed procedures and also lets you evaluate whether your data "make sense."

Discuss with staff. Have each staff member involved in the student assessment process complete the assessment evaluation form. Discuss the results with them and identify a plan for improving areas of weakness.

Observe staff. Observe staff conducting assessments, using the evaluation form during your observations. Identify areas of strength and weakness and discuss with staff.

Review a sample of student records. Select a sample of your program's student records to determine whether assessments are conducted properly, such as whether staff used the appropriate test and form and when the test was administered.

Review program data. Review the assessment data of your program overall to evaluate whether it provides a clear and accurate picture of your students' performance on the assessments. Anomalies or things that "don't make sense" give you clues to what might not be working correctly. For example, all students would not usually gain a level. Other data to examine include:

- The number and percentage of students pre- and posttested.
- The number of students placed in each level.
- The percent of students advancing by level.
- The average number of instructional hours it takes students to advance by level.
- The average number of hours of instruction received by level.

Look for student groups that have higher or lower than average numbers—that stand out compared to the others. Try to determine why these anomalies exist.

Case Study #3: Measuring Educational Gain

The Ysleta Community Learning Center is located near El Paso, Texas, about half a mile from the US/Mexico border. At the Center, awareness on the part of teachers, students, administrators and staff that their progress is being monitored has created an environment of accountability and a focus on instruction.

In the past, students could advance from one educational functioning level to another on the judgment of the teacher or request from the student. With the implementation of performance-based funding in Texas, as well as the NRS, students now can only move from one level to another based on their pre- and posttest scores. Center staff assesses students after every 40 hours of instruction, allowing students to progress in the mid-term, as well as at the end of the semester or program year. Program staff has found that using exams to move students forward helps staff with student goal setting and to pinpoint areas of growth, and makes students and staff more accountable.

An important component of the assessment process is feedback to staff. The ABE director obtains the data from ACES, the state data system, and provides teachers with charts that compare their classes to similar classes by time and subject. Staff also compares contact hours, percent progress tested, completion of one or more levels, and GED achievement. The data are then discussed as a group and individually with the director. Based on the data, goals for the coming semesters are set. Since the assessments help teachers gauge student successes and what works, they are eager to ensure that students are progress tested and they are very attentive to issues of retention and attendance. Going over the data has given teachers ownership of the process, which helps ensure progress testing gets done.

Contact: *Irma H. Trujillo*
Ysleta Community Learning Center
http://www.ysleta.isd.tenet.edu/html/ysleta_community_learning_cent.html

Sample Data Table #3
Educational Gain: Percentage of Students Pre- and Posttested by ABE Level

ABE Level	N	Percent Pretested	N	Percent Posttested
Beginning Literacy	59	92%	43	40%
Beginning Basic	12	95%	6	29%
Low Intermediate	55	84%	17	34%
High Intermediate	71	13%	34	18%
Low ASE	64	81%	32	38%
High ASE	47	79%	79	41%

Potential Problems

- There are significantly fewer students posttested in the Beginning Basic Level than at other levels. This percentage should be checked and if accurate, indicates assessment practices should be improved so that more students are tested.
- The percent of High Intermediate students who were tested (both pre- and post-) is lower than for the other levels. Also, more students were posttested than pretested. These anomalies may indicate a testing problem.

Sample Data Table #4
Educational Gain: Percent and Number of Students Advancing and Hours to Advance by Level

ABE Level	N	Number Advancing	Percent Advancing	Average Hours to Advance
Beginning Literacy	36	31	85%	87
Beginning Basic	7	5	76%	42
Low Intermediate	24	17	72%	12
High Intermediate	21	10	45%	41
Low ASE	19	18	95%	39
High ASE	17	13	78%	37

Potential Problems

- Significantly fewer students in the High Intermediate Level advanced and many more in the Low ASE Level advanced. This could be a sign of instructional problems with students in these levels or data entry errors.
- The number of hours needed to advance for the Low Intermediate Level is low compared to the others and should be checked.
- Advancement rates overall seem high and should be verified.

ASSESSMENT PROCEDURE EVALUATION

A. Describe Your Assessment Policies and Procedures

Describe your program's assessment policies and procedures. Include in your description the assessments and its forms used for ABE, ESL and ASE, when pre- and posttesting takes place and training provided to staff. Then complete the checklist in Part B.

B. Rate Your Assessment Policies and Procedures

Assessment Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Appropriate assessments selected, following state requirements.				
2. Appropriate forms or versions of the assessment, using different forms at each administration.				
3. Established uniform time to administer the initial assessment.				
4. Procedures for placing students in the appropriate level based on the initial assessment.				
5. Established uniform time to administer the posttest or follow-up assessments.				
6. Procedures for determining level advancement of students based on the posttest or follow-up assessment.				
7. Staff trained in administration of the test, including timing of test, scoring and providing feedback to students.				

C. Evaluate Your Assessment Policies and Procedures

Note aspects of assessment procedures you or your staff misunderstand or lack knowledge about. Describe your program's areas of strength and weakness in assessment, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of procedures in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completi ng Corrections
1.			
2.			
3.			

INTAKE AND GOAL SETTING

Setting students' goals is an integral part of the education process. Establishing goals not only helps define the areas in which instruction and learning is to be focused, but goals also provide a benchmark by which programs and students can assess their progress. For these reasons, the goals set should be attainable and measurable.

Within the NRS framework, *all students* are assumed to have at least one goal: development of literacy skills. That is, all students are assumed to be in the program to improve their literacy skills. This assumed goal is the reason that all students are counted in the educational gain measure. Students often have other goals, but only four are directly relevant to the NRS: obtaining employment, retaining employment, achieving a GED or high school credential and entering postsecondary education. The NRS allows programs to designate additional goals for students as a main or secondary goal. Note that the default goal of educational gain remains regardless of whether the student designates any of the additional goals.

When a student has one of the "follow-up" goals, the program is held accountable for helping the student attain the goal, according to NRS policy. The program or state must obtain information on whether the student achieved the goal after he or she leaves the program (see the next section on follow-up measures). For this reason, it is important not only that the student can attain the goal during the program year, but that the program's instruction and services are oriented toward helping the student achieve the goal. For example, a student with a goal of GED attainment should be at a literacy level that will make passing the GED tests likely within the year. The student should also receive instruction that will help him or her acquire the additional skills needed for passage of the tests. Similarly, if the student's goal is to obtain a job, the program should provide instruction and services to help the student obtain the skills needed to obtain employment.

While setting a realistic goal is important for the NRS, students' longer-term goals should not be ignored simply because they are not obtainable during the NRS reporting period. Many programs set short- and long-term goals for students, so that the programs' performance measures will not be adversely affected while the students focus on their longer-term goals.

Procedures and Policies

Your program's goal setting should include the following procedures. Use the assessment evaluation form and checklist to rate your program in each area.

1. **Procedure to orient students and help them set goals for instruction.**

   Your program should have a procedure in place for orienting students to the program and helping them set goals for instruction. The best time for this process to occur is when the learner first enters the program. During the intake process, students typically complete paperwork, providing basic information about themselves, and may take mandated assessments. Either as part of the intake process, or at a separate

time shortly thereafter, your program should have another process whereby students meet with teachers or an intake counselor at least once to help them establish goals for instruction.

2. **Procedure includes identification of attainable short- and long-term goals.**

   During the goal setting process, learners, with assistance from program staff, should identify their goals and reasons for attending the program. As part of this process, staff should help learners set both a realistic timeline for attaining each goal and a means for determining whether the goal has been achieved. Setting the timeline and evidence of achievement will help the learner realize whether the goal is short- or long-term and whether the goal is achievable. For example, when they enter a program many learners state very broad goals, such as attaining a GED or getting a job. Breaking the goal down into discrete steps—with short and long-term milestones along the way—will establish a series of goals which will help learners and teachers to design instruction, as well as identify the appropriate goals for NRS purposes. Since learners often change their goals as they begin instruction, you might consider extending goal setting over additional sessions during the first few weeks.

3. **Method identifies NRS follow-up goals appropriately.**

   The goal setting process will identify whether you should set one or more of the NRS follow-up goals—obtain employment, retain employment, enter postsecondary education or obtain a GED—for a learner. Since your program will be held accountable for whether the learner achieves this goal, you should consider, through your goal-setting process, whether there is a realistic chance that the student can achieve the goal during the reporting period. For example, it is unlikely that lower level students will enter postsecondary education or pass the GED tests during this short period of time. For such students, you should consider setting such goals for the long-term. Employment goals may be more difficult to evaluate. During the goal setting process, explore with the learner the skills he or she needs to get a job and the time that might be needed to attain these skills. These skills may be broad, such as learning to speak English better, or more specific, such as to read manuals to operate machinery.

   On the other hand, it may be tempting to be too conservative in setting long-term goals, as they are rarely met by learners. You should avoid this inclination, since this does a disservice to the learner, and set goals *appropriately*. Good instruction requires you to assist the learner in achieving goals, not play a numbers game. In addition, if you ignore long-term goals, you deny your program the opportunity to demonstrate that it can help learners achieve such goals.

4. **Procedures for supporting student follow-up to determine goal attainment.**

   Once a student has selected an NRS follow-up goal, your program or state is responsible for determining whether the goal is attained for NRS reporting. This procedure involves following up on the student at some time, depending on the goal, after the student has left the program. Your state or program may collect goal

attainment through a data matching methodology or by a survey. If your state uses data matching, you may need to collect the student's Social Security number and obtain consent to use the number for matching purposes. If your program uses a follow-up survey, it is vitally important that you obtain the information you need from the student to allow you to locate and contact the student in the future. If you are unable to locate the student after he or she has left to obtain information on goal attainment, the validity of your data may suffer. Consequently, your intake process should include an explanation of the survey and its purpose, contact information and the names and numbers of people who might be able to locate the student several months later. If you have knowledge of when the student will leave or complete instruction, it is also advisable that you remind the student about the survey and re-check contact information, shortly before the student exits.

5. **Forms and procedures to enter student demographic and goal information into your program's database.**

   To enable your program to check on students with follow-up goals, your program's database must have the capability to retrieve the identity of these students and their contact information. Your program's intake forms and database should have fields that allow for the identification of follow-up goals and, if a survey is planned, the names, addresses and phone numbers of students and other information on how to reach them.

6. **Procedures to obtain demographic and other student measures.**

   Programs collect other NRS-related information about learners at intake. Besides goals and Social Security numbers (in some programs), programs collect the NRS demographic measures (age, race, sex) and employment and disability status. Your program should have forms that include all of the NRS and additional state measures and the appropriate categories for each measure (such as ethnicity categories) and fields in your program database to allow for data entry and retrieval. In addition, your program should have a means for timely identification of missing information, so that the student can provide the missing data before he or she leaves.

Indicators of Performance

If you uncover problems with your program's intake and goal setting process or simply want to examine your program's procedures further, there are several ways to investigate. You should maintain ongoing communication with staff that is involved in goal setting, observe staff or talk to students about their goals. You can also review your program's data for clues on what is not working.

Discuss with staff. Talk to intake staff members about how they assist students in setting their goals. You might have staff members discuss or complete the goal setting evaluation form to facilitate discussion. If your discussion uncovers issues or problems, work with staff to identify a plan for improving areas of weakness.

Observe goal setting. Observe staff during an intake and goal setting session, using the evaluation form during your observations. Identify areas of strength and weakness and discuss with staff.

Talk with students. Talk to students individually or in a small group about their experience in goal setting, why they set the goals they did and get their evaluation of the goal setting process. This discussion may give you insights in the process from the students' perspectives.

Review program data. Review your program's student demographic and goal data to evaluate whether they provide a clear and accurate picture of your students' goals, consistent with your program's approach and students' needs. For example, you could examine:

- The number and percentage of students with specific goals.
- Goals by type of student groups.
- Goals by educational functioning level.

A review of these data may reveal patterns that stand out or that are difficult to interpret. For example, do students at beginning levels have GED attainment as a goal? Do some students have no goals listed? Is the number of students with certain goals too low or too high? Also examine whether there is an appropriate number of students with a goal of obtain employment and enter postsecondary education.

INTAKE AND GOAL SETTING: VIGNETTES

- A community college literacy program in rural Ohio ran classes over a large geographic area and wanted to improve the accuracy of its data and insure the integrity of its intake process, goal setting and testing. The college administrators found staff turnover and, in some cases, indifference to data collection, required them to be continuously training and tracking down student files. To ensure accuracy of data, the college created an intake and testing team that conducted the entire intake, goal setting and testing process at all locations—at the college and off site. The completeness and validity of goal and outcome data improved markedly.

- The Framingham, Massachusetts Adult ESL Program offers classes to help students improve their reading and writing skills and to prepare them to take the GED tests. Students set goals at intake and teachers conduct an end of the semester interview with students to determine if goals have been met. Goals sheets have been translated into various languages so that students completely understand what goals they are establishing and what they are being asked to report at the end of the semester.

Sample Data Table #5
Intake and Goal Setting: Number of Students Setting Goals by Student Group

	Entering Employment		Retained Employment		Placement in Post-Secondary Education	
	Number with Goal	Percent With Goal	Number with Goal	Percent with Goal	Number with Goal	Percent with Goal
American Indian or Alaskan Native	12	24%	15	30%	5	10%
Asian	16	25%	14	21%	**57**	**89%**
Native Hawaiian or Other Pacific Islander	2	**100%**	—	—	—	—
Black or African American	17	20%	15	18%	3	4%
Hispanic or Latino	89	**12%**	67	**9%**	**0**	**0**
White	25	20%	21	17%	40	32%
Total	161	15%	132	12%	105	10%

Potential Problems

- Does it make sense that the percentage of Asian students who report having the goal of entering post-secondary education is so high? This finding should be checked.
- It seems unlikely that no Hispanic or Latino students and no African American students had the goal of entering post-secondary education. These data should be checked. These missing data may represent an omission of collected data or a problem collecting these data from this population.
- The percentage of Hispanic students setting goals is lower than the other ethnic groups and should be investigated.
- 100% of Native Hawaiian or Other Pacific Islanders setting an employment goal should be interpreted cautiously, as this group consists of only two students.

Sample Data Table #6
Intake and Goal Setting: Number of Students with Goal by ABE Level

	Total Students Setting Follow-up Goals	Percent with Enter Employ-ment Goal	Number with Enter Employ-ment Goal	Percent with Retain Employ-ment Goal	Number with Retain Employ-ment Goal	Percent with Enter Post-Secondary Education Goal	Number with Enter Post-Secondary Education Goal
Beginning Literacy	427	19%	81	10%	41	4%	17
Beginning Basic	441	5%	20	3%	12	1%	3
Low Intermediate	529	25%	130	18%	96	1%	5
High Intermediate	67	19%	13	10%	7	—	—
Low ASE	498	18%	91	7%	37	1%	4
High ASE	790	20%	157	11%	83	1%	8
Total Students with Any Follow-up Goals	2752	18%	492	28%	768	5%	125

Potential Problems

- Are the reported goals set realistic and correct for each level? Seventeen students in Beginning Literacy have the goal of entering post secondary education. Is this a realistic goal? Not likely; these data should be checked.
- Is it realistic that such small percentages of students should have a goal of enter postsecondary education? These numbers should be checked.
- The totals should represent the sum of the columns, 125 is not the sum (nor 5% the percentage) for the post-secondary education column.

INTAKE AND GOAL SETTING PROCEDURE EVALUATION

A. Describe Your Intake and Goal Setting Procedures

Describe your program's student intake process, focusing on how and when student's goals are set, especially NRS outcome goals. Also describe how your program collects demographic data (age, race, sex ethnicity). Then complete the checklist in Part B.

B. Rate Your Intake and Goal Setting Procedures

Intake and Goal Setting Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Procedure to orient students and help them set goals for instruction.				
2. Procedure includes identification of attainable short- and long-term goals.				
3. Method identifies NRS follow-up goals appropriately.				
4. Procedures for supporting student follow-up to determine goal attainment.				
5. Forms and procedures to enter student demographic and goal information into your program's database.				
6. Procedures to obtain demographic and other student measures.				

C. Evaluate Your Intake and Goal Setting Procedures

Identify the aspects of your program's student intake and goal setting procedures your staff misunderstands or lacks knowledge about. Describe your program's areas of strength and weakness, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of procedures in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completing Corrections
1.			
2.			
3.			

FOLLOW-UP MEASURES: EMPLOYMENT, GED AND POST-SECONDARY EDUCATION

The NRS includes four outcome measures that must be collected from students after they leave the program: entered employment, retained employment, entered postsecondary education and obtained a secondary credential (adult high school diploma or pass the GED tests). Programs must collect these measures only from students who designate these outcomes as one of their goals for attending the program (see the previous section on goal setting). NRS guidelines give states the option of collecting these measures through a data matching procedure or through a survey of the students who designated the follow-up goals. The NRS allows either the state or local program to conduct the survey, as long as the survey methodology includes all local programs. This section discusses the NRS procedures for conducting the follow-up survey and for data matching.

Most programs and states consider conducting the follow-up survey the most difficult aspect of NRS data collection. It is extremely difficult to conduct a survey in a way that produces valid and reliable results. The process includes determining which students you must include in the survey; sampling students, if necessary; locating them and securing their cooperation; and administering the survey. Finding the students and getting them to cooperate in the survey is critical to its success, since the response rate—the proportion of students you reach—largely determines the validity of the information. Locating adult education students is especially difficult, given the transient nature of many adult education students.

Further compounding the difficulties of conducting a survey for NRS purposes are the time requirements for the employment measures. The NRS requires that you contact students with employment goals during the first quarter after they exit and, if they obtain employment, again two quarters later.

Due to the inherent difficulties of conducting a follow-up survey, many states use data matching to collect follow-up measures, especially the employment measures. Data matching links records from the program database to another database that has the needed information on the same people. For example, using Social Security numbers, student records from a program can be matched to the state unemployment insurance wage database to determine whether students are employed and have retained employment. Data matching, which is done at the state level, removes the burden of the survey from local programs. However, there remain several data collection issues that local programs must address to ensure quality data with data matching. This section first presents issues related to conducting the follow-up survey and then concludes with data matching.

Procedures and Policies for the Follow-up Survey

Your program's procedures for conducting follow-up surveys should include the following steps. Use the assessment evaluation form and checklist to rate your program in each area.

1. **Method for identifying students who must be followed-up.**

   According to NRS *Guidelines*, programs must follow-up on students who designate as a main or secondary goal to obtain or retain a job, enter postsecondary education or obtain a secondary credential. This follow-up takes place after the student leaves the program. Consequently, your program's database must have the ability to identify students who must be followed, which include: (1) all students with a goal of obtaining a job who exited, (2) students with a goal of keeping or improving their current job who exited, (3) students with a goal of obtaining a secondary diploma or passing the GED who exited and (4) students with a goal of entering postsecondary education or training who exited. The report or output produced by your program's database should include student identifying and contact information, the student's follow-up goal and for employment measures, the date the student left the program. You should retrieve this information quarterly or according to the time you administer the survey.

2. **Sampling procedures in place, if necessary.**

   If you have 300 or fewer students in any follow-up outcome group who exited, NRS *Guidelines* require that you include all of these students in the survey. However, if you have more than 300 students in any group, you may draw a simple random sample of these students. You may use any simple randomization procedure to draw the sample, such as drawing every third or fourth name from a student list, a table of random numbers, or you can have your program's computer system draw a random sample. If your program has from 301 to 5,000 students in any outcome area who exited, the minimum sample size you must draw is 300 for that group. If your program has over 5,000 students in any outcome area that exited, you should draw a minimum sample size of 1,000 for that group.

3. **Survey is conducted at the proper time.**

   While you may collect and report attainment of a GED or secondary credential and entry into postsecondary education at any time after the student exits, the employment measures are tied to specific quarterly exit periods. Students with a goal of obtaining a job must obtain the job within the first quarter after program exit quarter. You must then collect retained employment on those students who obtained a job two quarters later, that is, in the third quarter after program exit. Due to the time specific nature of the employment measures, quarterly survey data collection is recommended.

   Note, however, that there are three special cases to these requirements: (1) if a student obtains a job while enrolled, you may count that outcome, but only after the student exits the program and in the first post-exit quarter; (2) an employed student who enters the program with job retention as a goal is surveyed in the third quarter after exit quarter to verify continued employment (not in the first exit quarter); and (3) retained employment is not counted for any student exiting in the third or fourth exit quarter of the program year, since their third quarter after exit is beyond the reporting period for the program year (i.e., December 31). The following chart summarizes the quarterly time periods for collecting employment measures.

Exhibit 4-1
Quarterly Periods for Collecting Entered and Retained Employment

Exit Quarter	Collect Entered Employment by the end of:	Collect Retained Employment by the end of:
First Quarter (July 1–September 30)	Second Quarter	Fourth Quarter
Second Quarter (October 1–December 31)	Third Quarter	First Quarter, Next Program Year
Third Quarter (January 1–March 31)	Fourth Quarter	Not Reported
Fourth Quarter (April 1–June 30)	First Quarter, Next Program Year	Not Reported

4. **Program uses state approved survey instrument, translated for ESOL students, if necessary.**

   In any survey, how the questions are asked may influence the responses. Therefore it is important that the survey questions you ask do not bias or affect responses. For comparability of data across programs in the state, it is also highly advisable that all programs in the state use the same or equivalent survey instruments. For these reasons, you should use a survey questionnaire that your state approves or has provided to you. The survey should be short and simple. It is not necessary to have a long or complicated survey to collect NRS measures. For example, you need only ask if the person got a job or passed the GED. In addition, if you will be surveying ESOL students, the survey should be translated into the most common languages your students speak.

5. **Adequate staff to conduct survey.**

   Conducting a survey is highly labor intensive. Besides administering the survey, you must locate the students, explain the survey to them and obtain their cooperation. This work requires frequent callbacks to students and careful record keeping. Your program should ensure that you have sufficient staff and time to conduct the survey. Due to lack of resources, your program may use teachers or other program staff to conduct the survey. However, this approach may be inadequate if these staff members do not feel the work is a priority or if they do not have sufficient time to conduct the survey. A better approach is to have staff whose primary responsibility is to collect the follow-up data. For example, your program could hire a part-time assistant or volunteer for the survey. Another approach is to contract the survey out to a third party, which several states currently do. While costly, this approach is desirable if your program or state can afford it, since it removes much of the burden from your local programs.

6. **Staff trained on survey procedures.**

   While other methods are possible, most programs will conduct a telephone survey of students. Like any other data collection effort, staff must follow a uniform set of

procedures to collect data in a valid and reliable manner. You must provide training to all staff conducting the survey, which should cover the following topics: what to say to students to introduce the survey and get their cooperation; ways to avoid refusals; how to ask the survey questions; how to record responses; and how to answer student questions about the survey. During the training, you should go over every question in the survey to ensure staff understands the purpose of the question, what is being asked and what responses are desired. The training should also include conducting mock interviews and other practice. Staff should be thoroughly familiar with all questions and procedures before beginning. It may be desirable to have a follow-up training to ensure understanding and standardization of procedures.

7. **Survey procedures in place to improve response rate.**

The validity of a survey depends to a large degree on the response rate—the proportion of people who respond to the survey out of the total number whom you targeted to reach in the survey. If you try to ask 100 students whether they passed the GED, for example, but only reached 10, you cannot be confident that these 10 students reflect the other 90. The NRS requires a minimum response rate of 50 percent. For example, if you have 300 students in the survey, you must get information from at least 150 students. Getting a good response rate is probably the most difficult part of conducting a survey, since it is hard to reach people and get them to respond. It may be especially hard to reach adult education students since many are transient and may not have telephones. Your survey procedures and training should include ways for improving response rate. For example, these procedures help improve response rate:

- Inform students when they enroll and again before they leave about the survey. You should also maintain current contact information on students by periodically verifying the information with them, especially if you have advance notice of when they are leaving the program.

- Call back students you cannot reach at different times during the day (not just on weekday evenings, for example).

- Leave a detailed message if you cannot reach the student, explaining why you are calling and asking for a good time to call back.

- Stress the importance of the survey to the adult education program, if the student is reluctant to participate.

- Keep the survey short (e.g., 5-10 minutes), so the student does not feel burdened.

- Keep track of the days and times that students have been contacted.

8. Program or state has a database and procedures for entering and reporting survey data.

Once you have administered the survey, you must have a way to record responses so that they can be entered into your program or state database. Your state may have a special database established for the survey or you may be required to enter the survey information directly into your student record database. In some programs and states, you might send the survey forms to a data processing contractor who maintains the data. Regardless of approach, you need to have an organized method to keep track of which students are to be contacted, which students have been reached and whether the students achieved the outcomes. You need this information to conduct the survey and track your response rate. The state needs the information so it can aggregate the data across programs for NRS reporting. You should report in the database the total number of students with the goal who exited; if you sampled, the number of students sampled; the total number of students you reached; and the number who attained each outcome. You can compute your response rate by dividing the number you reached over the total number of students (or number sampled, if you sampled) with the outcome goal who exited. Exhibit 4-2 shows a table of the type of information your database needs to report.

Exhibit 4-2
Sample Local Program Survey Report Form

Outcome Measure	Total Students with Main or Secondary Goal Who Exited	Total Number of Students Sampled	Total Number of Students Responding	Number Achieving Outcome	Response Rate (Total Responding/ Total Sampled)
Entered Employment					
Retained Employment					
Receipt of Secondary Credential					
Entered Postsecondary Education or Training					

Indicators of Performance for the Follow-up Survey

If you uncover problems with your program's survey process or want to examine your survey procedures further, there are several ways to investigate. You could begin by discussing the process with staff that is involved in conducting the survey, observe staff's performance and review your program's data for clues on what is not working.

Discuss with staff. Talk with survey staff members about the problems they have with the survey, what works well and what does not. It is helpful to identify staff members who do a good job reaching students and getting them to participate. These staff members can help others who are not as successful and will give you clues on how best to find students. For example, you might discuss what times to reach students, what to say to them and what types of messages to

leave. Review the evaluation form with staff and work with them to identify a plan for improving areas of weakness.

Observe the survey process. Select times to review with staff the steps they perform when conducting the survey, from obtaining the list of students to contact; drawing the sample, if applicable; efforts to reach students; and the actual survey administration. Observing the process may give you insight into how well the process works and what needs improvement.

Review program data. Review your program's student data on follow-up measures to evaluate whether it provides a clear and accurate picture of your students' follow-up outcomes. For example, you could examine:

- The number and percentage of students who attain each outcome, overall, by student demographics and student educational functioning levels.
- The response rates to the survey overall, by student characteristics and by outcome.

A review of data like these may reveal patterns that stand out and raise questions. For example, are there very low response rates for some types of students? Are there few successful outcomes for some measures? You might also look to determine whether the number of students achieving each outcome is where you want it to be, given the goals and purposes of your program. For example, you might look at the number of students passing the GED or entering into postsecondary education, if helping your students achieve these outcomes are goals of your program.

Procedures and Policies for Data Matching

Data matching is a technical process that requires your data system to produce specific data in a required format. To conduct this process, each student to be matched needs a valid Social Security number. Use the assessment evaluation form and checklist to rate your program in these areas.

1. **Procedure for collecting and validating Social Security numbers.**

   Data matching works by pairing records from different databases for the same student using a common identifier—a Social Security number. Consequently, you must obtain a valid Social Security number for all students whose data will be in the data matching pool. You will usually collect this number at intake and, in some states and localities, will need to inform the student about the use of the Social Security number for this purpose. Some states may require written permission. It is critical to obtain Social Security numbers, since without it, data cannot be matched and no outcomes can be reported. Similarly, you need a process to verify the validity of Social Security numbers before submitting data for matching. Your program database must be able to produce a report to identify students with missing, erroneous or duplicate Social Security numbers and you should run this report as soon as possible after students enroll. If you wait too long to identify problem numbers, the student may have left the program and you may not be able to correct the information.

2. **Data are in the proper format for matching to the external database.**

   While there are several ways to perform data matching, all techniques rely on software to link multiple databases and produce the number of matches for each outcome area. To perform these operations, the software will require your data to be in a specific format that will include the location, size and name of each variable, as well as the technical format in which your program database is to write the data. Ensure that your program database can produce the data according to your state's specifications and that you submit your data in this format.

3. **Data are for the matching time period.**

   Your state will have a time period for data submission, such as quarterly or annually. When you create the data for submission for matching, your database should produce the records for students who have exited your program during this time period. Check your data prior to submission to ensure you do not include students who are still enrolled or students that exited in other time periods.

4. **Data system can produce individual records with Social Security number, goal and exit quarter.**

   Successful data matching requires individual student records with three pieces of information: a Social Security number, so that data can be linked across data-bases; the student goal, (e.g., obtain employment) or separate files for students with each goal on which data will be matched, so that the student can be matched with the correct database; and the exit quarter for employment outcomes, since the NRS requires entered employment to be measured in the first quarter after exit quarter. Retained employment must be measured the third quarter after exit quarter (see Exhibit 4-1). Your database must be capable of producing records with at least this information, and in your state's required format (see point number 2, above).

Indicators of Performance for Data Matching

If you uncover problems with your program's data matching procedures or simply want to examine your program's procedures further, you can investigate by discussing procedures with your intake and data processing staff. You can also review your program's data for clues on what is not working.

Discuss with staff. The procedures followed by intake staff and data processing staff have the greatest effect on the quality of your data for data matching. For intake staff, discuss the importance of recording NRS goals for students and collecting Social Security numbers and try to resolve any problems with collecting and verifying numbers from students. Talking to data entry and processing staff may give you insight on any difficulties in producing data sets, identifying exit dates or formatting data appropriately.

Review program data. Review the data your program plans to submit for data matching before you send them to the state or matching agency. Look for patterns of missing data and anomalies, by examining tables such as:

- Frequency tables of Social Security numbers.
- Students entry and exit dates.
- Data formats and layouts.
- Student goals.

A review of these types of tables will reveal problems such as missing or duplicate Social Security numbers, inclusion of students who are still enrolled or who exited in a quarter outside of the range date you are submitting, and inclusion of students with other goals.

Sample Data Table #7
Follow-up Survey Measures: Follow-up Outcome Attainment and Response Rates

Outcome Measure	Total Exiting Students with Goal	Total Number of Students Sampled	Total Number of Students Responding	Number Achieving Outcome	Percent Achieving Outcome	Response Rate
Entered Employment	185	0	185	**169**	**91%**	**100%**
Retained Employment	615	312	**689**	516	**75%**	**112%**
Receipt of Secondary Credential	506	300	**19**	**11**	**58%**	**6%**
Entered Post-secondary Education	165	0	132	78	74%	80%
Total	1471	612	**1025**	**875**	**85%**	**70%**

Potential Problems

- Is it realistic that 91% students met their goal of entering employment or that a 100% response rate was achieved? These percentages are extremely high and should be checked.
- Response rates should not equal more than 100% (retained employment). The number and percentage of students achieving this goal is also likely in error and should also be checked. This erroneous percentage will also make the totals incorrect.
- For receipt of secondary credential, 6% is an extremely low response rate. This rate should be checked for data entry error. If accurate, data collection procedures may need clarification or revision. These numbers are too low for accurate reporting.

Case Study #4: Follow-Up Survey

In Alabama, the State Department of Education contracts with Auburn University to conduct a telephone follow-up survey for all local adult education programs in the state. The survey collects entered employment, retained employment and entry into postsecondary education. Each local program inputs its student data into the state management information system and exports its data to the state server quarterly. The state merges all data and the system generates follow-up reports by program, core goal and exit date.

Alabama developed a simple survey, using the *NRS Guidelines* as a guide to develop the survey questions. The survey is in an ACCESS database that interviewers use to enter student responses. Survey staff calls each student three times and at different times of the day to improve response rate. Auburn sends the follow-up data back to each local program via e-mail and local program staff imports the data back into their local databases.

Auburn staff recommends the following procedures to minimize survey errors when developing follow-up procedures:

- Train interviewers on the survey forms;
- Understand survey questions, definitions, and phrases;
- Read questions exactly as written and follow instructions;
- Complete interview within designated time frame;
- Attend to administrative issues as soon as possible;
- Know the purpose and structure of the NRS;
- Design database with NRS guidelines in mind;
- Report follow-up data to locals for input into the database at the local level only;
- Set deadlines for data to be exchanged; and
- Learn patience!

Contact: *Jo Smith*
Auburn University
http://www.auburn.edu/

FOLLOW-UP SURVEY PROCEDURES EVALUATION

A. Describe Your Procedures for Conducting the Follow-up Survey

Describe your program's survey procedures for collecting follow-up measures. Include the procedures you use for sampling, if applicable. Also describe the survey instrument you use, training given to staff on the survey and ways survey data are entered into your computer system. Then complete the checklist in Part B.

B. Rate Your Follow-up Survey Procedures

Follow-up Survey Procedures Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Method for identifying students who must be followed-up.				
2. Sampling procedures in place, if necessary.				
3. Survey is conducted at the proper time.				
4. Program uses state approved survey instrument, translated for ESOL students, if necessary.				
5. Adequate staff to conduct survey.				
6. Staff trained on survey procedures.				
7. Survey procedures in place to improve response rate.				
8. Program or state has database and procedures for entering and reporting survey data.				

C. Evaluate Your Follow-up Survey Procedures

Identify the aspects of your program's follow-up survey procedure that you are not performing adequately. Focus on procedures your staff misunderstands or lacks knowledge about. Describe your program's areas of strength and weakness, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of procedures in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completing Corrections
1.			
2.			
3.			

DATA MATCHING PROCEDURES EVALUATION

A. Describe Your Data Matching Procedures

Describe how your program deals with data issues related to data matching, including collecting of Social Security numbers, and the capability of your program database to produce files the state can use for data matching. Then complete the checklist in Part B.

B. Rate Your Data Matching Procedures

Data Matching Procedures Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Procedure for collecting and validating Social Security numbers.				
2. Data are in the proper format for matching to external database.				
3. Data are for the matching time period.				
4. Data system can produce individual records with Social Security number, goal and exit quarter.				

C. Evaluate Your Data Matching Procedures

Identify the aspects of your program's data matching procedures your staff misunderstands or lacks knowledge about. Describe your program's areas of strength and weakness, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of procedures in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completing Corrections
1.			
2.			
3.			

LOCAL STAFF TRAINING

Although you may have all of the procedures for collecting NRS data described in this guide, your program still may not end up with high quality data if you lack one key element: a system for training your staff. Without training, staff will not know or understand the procedures and will implement procedures in incomplete or haphazard ways, hurting data reliability and validity.

It is impossible to over-emphasize the importance of a strong, effective system of professional development on data collection issues. All too often, states and programs put much effort into developing forms, procedures and database systems and put little thought or resources into training. In addition, the training cannot be an afterthought or a one-time session, such as an annual workshop that is part of a state conference or a review of the NRS procedures manual. While this type of training is necessary, it is not sufficient to produce quality data. The training should engage staff and be an ongoing feature of your program—offered on a regular basis at convenient times. Training should also be based on the needs of staff, focusing on areas where there is lack of knowledge or where performance is poor. Regular needs assessments on data collection issues will help identify training topics.

Procedures and Policies

Your state or other funding agency may support training on data collection and your program may also provide training directly to staff on the specific procedures at your site. Use the assessment evaluation form and checklist to rate your program in the following areas, which reflect good professional development processes.

1. **Staff has received training on NRS policy and data collection procedures.**

   All of your staff should be trained and fully knowledgeable of NRS policy, accountability policies specific to your state and locality, and the data collection process in your program. Training on data collection should cover not only each individual's job in the process, but include a review of others' roles and how each activity affects the other. The training must be specific and detailed, including such mundane topics as completing forms, data entry procedures, error checking, and the program's database system, along with general accountability requirements. For example, the training should review intake and goal setting procedures, assessment policies and follow-up requirements. You should ensure that new staff members receive training soon after they start and that there is opportunity for follow-up and ongoing training.

2. **A system of continuous professional development on data collection is in place.**

   "One-shot" trainings on any topic generally do not have lasting impact. Staff will forget procedures, find they misunderstood some part of the training or may think some procedures do not work effectively and not follow them. A continuous system of professional development will help resolve these problems and given the general

high turnover among adult education staff, will also give you an ongoing mechanism to train new staff as they join your program. You should schedule training regularly throughout the year and also employ different modalities of training to improve effectiveness and impact on data collection procedures. For example, you might schedule general workshops, individual peer mentoring, shadowing or project-based learning activities.

3. **Training addresses staff needs.**

   Although all staff should receive an initial, general training on data collection and state accountability and NRS requirements, you should design training according to the needs of your staff. Using a periodic formal or informal needs assessment, collaborative planning process or review of procedures, such as outlined in this *Guide,* you can identify areas where staff needs or wants further training. Using this input to design training will make it more relevant to staff, thereby increasing interest and the likelihood that the training will result in improved data collection procedures.

4. **Use effective trainers, who use interactive and hands-on activities, to lead training.**

   The trainers who provide training to local staff are almost as important as the content of the training. Use trainers that your staff respects and recognizes as knowledgeable of the data collection process. Otherwise, staff is likely to disregard or ignore the training. Select trainers who are articulate, well organized and who respect the contributions and input of participants in the training. In addition, the training is likely to be more effective if it employs interactive, hand-on activities, rather than a lecture or "talking head." For example, you might ask staff to look at actual data tables and try to troubleshoot problems on their own, use peer teaching or try role-playing or demonstrations.

5. **Training results in learning and improved practice.**

   The goal of professional development is to change staff behavior. For training on data collection, the desired outcome is that staff learns and then correctly follows all procedures. While it is difficult to determine a cause-effect relationship between professional development, learning and behavior change, you can look at general patterns in data or observe staff at work to get an indication of training effectiveness. For example, after a training on assessment, you could observe staff administering tests or review student assessment records. If your database has the capability, you could examine the assessment data produced by individual staff members to look for clues about procedural differences. Whatever the method you use, you will have a better professional development approach if it includes ways to verify staff learning and implementation of procedures staff has learned.

Indicators of Performance

If you want to examine your program's training further, there are several ways to investigate. You should discuss training with staff that is involved in data collection and observe

staff members as they do their job. Your program's data can also give you clues about what training might be needed.

Discuss with staff. Talk to all staff members involved in data collection about what they do, what they are not clear about and what they think they could do better. Through this discussion you might also explore areas of resistance among staff and reasons why the process is not working as it should. Staff may also have insights into ways to resolve data collection problems. You could use this information to work with staff to identify a plan for training to improve areas of weakness.

Observe data collection. Observe staff most directly involved in data collection to evaluate whether processes are working as you envision them. For example, observe how data are entered, forms completed and missing or erroneous data are resolved. Identify areas of strength and weakness and discuss with staff.

Review program data. Review your program's data for anomalies, missing data and other inconsistencies to get insight into areas where more training may be needed. You should examine data tables and look at data entered or collected by individual staff members. For example, you could examine:

- Amount of missing data by measure and for individual staff members.
- Dates when data are collected and entered.
- Out-of-range data or data that are impossible—for example, dates in the future, ages too old or too young, gender or ethnicity categories that do not exist.

When you evaluate these data, consider whether your program's data collection policies and procedures are clear and understandable. If procedures are well defined but data are still suspect, there may be a need for more and better staff training.

Sample Data Table #8
Local Training: Raw Data Table by Collector (Teacher)

Teacher and Student	Pretest Score	Posttest Score	Total Attendance Hours	Goals Set	Goals Met?
Smith, P.					
Ab, P.	32	51	45	Yes	No
Carillo, M.	**12**	**99**	34	—	—
Dillard, P.	16	67	37	Yes	—
Manj, M.	21	73	41	Yes	No
Rodriguez, C.					
Babek, N.	—	**12**	39	No	**Yes**
Cronos, S.	**99**	—	21	—	**Yes**
Richka, J.	—	—	36	Yes	Yes
Garcia, J.					
Bono, S.	**45**	53	**19**	Yes	Yes
Rios, R.	**49**	61	**21**	No	No

Potential Problems

- Rodriguez is not collecting complete or correct assessment data. All students are missing some assessment data, and what has been collected falls out of range: The data collection process needs to be explained, clarified or enforced with this data collector.
- The students in Garcia's class appear to be getting far fewer total attendance hours than the students in other classes. This problem may be due to poor record keeping and should be explored.
- Smith's class is missing goal attainment data.
- Rodriguez has reported goal attainment for a student with no reported goal and for a student with initial goals set missing.
- Garcia's students pretest scores seem high compared to the other classes.

Case Study #5: Local Staff Training

The Literacy Assistance Center (LAC) in New York City provides training and technical assistance to city literacy providers. LAC offers two workshops to help adult education providers with NRS data collection procedures. During the NRS *Outcomes Workshop,* participants define NRS goals and outcomes; learn how to collect outcomes according to NRS guidelines; learn the logic used by the state data collection system, ALIES, for outcome calculations including educational gain, employment outcomes and other outcomes; and test the system logic by working through case scenarios.

During the *Final Report Workshop,* participants discuss the way that information is calculated in the current year's final report, define and explain each of the final report fields, review specific examples to clarify the logic behind final report fields, review the data check reports used to verify and troubleshoot the final report, clarifying the use of each report with specific examples, and discuss unresolved issues.

Examples of the types of scenarios and sample data used in the trainings are illustrated below:

- **Outcomes Logic Activity.** Participants receive examples of students' test scores, goals and outcomes and work through the NRS logic with each student to determine if the combination of goals, outcomes, test scores and dates qualifies the student as achieving an NRS outcome.

- **Final Report Logic Activity**. Participants review examples of students who have achieved outcomes, similar to the outcomes logic activity, but these examples are discussed from the perspective of the NRS tables. For example, will this student count as completing a level? Will this student's contact hours count? Will the student be counted as achieving the outcome with a goal or without a goal?

- **Data Check Report Activity.** ALIES data check reports provide programs with a look into why their data appear as it does on the NRS tables. Samples of these reports include: students with less than 12 contact hours and students without pretests. The activity provides scenarios of problems and then participants determine which data check report will help them troubleshoot the problem.

Contact: *Megan Swiderski*
Literacy Assistance Center
http://www.lacnyc.org

LOCAL STAFF TRAINING EVALUATION

A. Describe Your Procedures for Local Staff Training

Describe how your program trains local staff on collecting NRS measures and other data. Describe when the training occurs, who attends and who conducts each training. Also include your strategies for ongoing training and ways you evaluate the effectiveness of training. Then complete the checklist in Part B.

B. Rate Your Local Staff Training

Local Staff Training Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Staff has received training on NRS policy and data collection procedures.				
2. A system of continuous professional development on data collection is in place.				
3. Training addresses staff needs.				
4. Use effective trainers, who use interactive and hands-on activities, to lead training.				
5. Training results in learning and improved practice.				

C. Evaluate Your Local Staff Training

Identify the aspects of your program's training that you are not conducting well. Describe your areas of strength and weakness, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of training in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completing Corrections
1.			
2.			
3.			

Chapter V. The State Role in Data Quality

The role of the federal government in education programs has traditionally been to provide funding, general guidance and regulations on how programs should be structured and managed. Many details of implementation, such as instructional content and approach, are left to state or local discretion. As a state-administered grant program, adult education follows this model, with states receiving a basic grant to provide instruction and services in accordance with a set of general requirements. States are responsible for establishing how instruction should be provided, types of students to serve and other details, within their local jurisdictions.

The NRS uses this same approach of establishing basic rules, with many of the specific details for implementation of these rules left to states. The NRS's *Implementation Guidelines* and *Survey Guidelines* define the measures, methods and reporting procedures for meeting the accountability requirements of the Workforce Investment Act (WIA), but both documents also designate a state role for further defining, implementing and even enhancing these requirements.

This chapter describes the state role in the NRS, reviews state responsibilities and as in other chapters, provides a self-evaluation checklist to help assess state procedures. The chapter also offers suggestions on ways to provide local program oversight and to make changes in your state to improve data quality.

Areas of State Responsibility in the NRS

In establishing an accountability system for the adult education program, the approach of the NRS is to establish federal guidelines to provide uniform requirements across the states, while giving each state the freedom and flexibility to design an instructional system that meets its own priorities and the needs of its students. This flexibility also permits the state to incorporate its own unique accountability requirements required by state agencies and other funding sources.

The need for uniformity in a national accountability system, coupled with the goal of state flexibility, creates an inherent tension within the NRS. If requirements are highly uniform, there is little or no room for state prerogatives, but there will be a high level of consistency of data across states. In contrast, when requirements have little uniformity, states have a great deal of flexibility, but this flexibility allows for little comparability across states. The NRS attempts to maintain a balance within this dynamic of uniformity-flexibility by establishing frameworks and general requirements for many aspects of the system, but allowing states a level of discretion on how they implement some parts of the NRS framework. Along with this discretion, however, states have a responsibility for implementing their brand of the NRS in a way that produces valid and reliable data, consistent with the requirements and spirit of the NRS. There are four areas in which states have discretion—and the responsibility—for implementation: assessment policy, the use of optional (non-core) outcome measures, methodology for collecting

follow-up measures and database and reporting software. States must also provide training, technical assistance and monitoring of local programs on data collection and reporting.

Assessment Policies

One of the most critical state responsibilities is to set a uniform state policy for assessment to measure educational gain. For education gain to be meaningful, local programs across the state must administer the same assessments in a consistent, standardized way. The NRS framework has six educational levels each for ESL and ABE, defined by skill descriptors in reading, writing, numeracy, speaking, listening and functional skills. Each level also includes test benchmarks for the most widely used tests in adult education. States have the option to use the tests or establish their own assessment approach, using the skill descriptors. The assessment approach must meet standard psychometric criteria for valid and reliable assessment. Using this framework, it is the state's responsibility to select tests or assessments for pre- and posttesting, establish times for pre- and posttesting, train local staff on these requirements and ensure local programs follow these procedures.

Use of Optional (non-core) Measures

Another example of state flexibility within the NRS is the use of secondary or optional outcome measures. While the WIA requires the core outcome measures, states have the option of collecting secondary measures to meet their own needs or to demonstrate additional measures of program performance. The NRS provides definitions and methodologies for collecting these measures to promote validity and reliability and to allow for a national aggregation, if enough states report them to the Department of Education. States must decide which, if any, of the optional measures to report.

Follow-up Methodology

Four NRS core outcomes can only be measured after the student leaves the program. Collecting these follow-up measures requires a survey of students after they finish or withdraw from adult education or the use of a data matching approach, where the outcomes for adult education students reside on another database. The data matching methodology links students from the other database with the adult education programs' database, using a common identifier. Unemployment Insurance wage records and the state GED test database are the most common sources for data matching for employment measures and attainment of a secondary credential, respectively.

With the survey method, programs or the state must survey students from every local program with goals related to the measure (e.g., get a job, advance to community college) to determine whether students achieved the outcome. It is the state responsibility to select a methodology for each NRS follow-up measure.

Database and Reporting Software

Reporting and use of NRS data requires that every local program have an individual student record system in a relational database. In addition, states must have software that allows aggregation of data from all local programs into a single state database for reporting. However, there is no national NRS student record or reporting software. States must select or develop their own software for local and state use that produces the NRS data tables for reporting.

Training, Technical Assistance and Monitoring

The state has the ultimate responsibility for ensuring that all local programs follow the state's data collection and reporting procedures. To make its system work, each state is responsible for ensuring that local programs receive ongoing training on NRS policies and procedures, state data collection procedures and reporting requirements. States should provide this training at least once annually. It is also advisable to have procedures and policies in writing or in electronic media (e.g., a website or CD) so that local program staff can reference them when necessary.

State responsibilities also include providing technical assistance to local programs to improve their data collection capabilities and monitoring and oversight of local procedures. This monitoring should include regular, ongoing review of local data and contact with local staff on data collection issues.

Evaluating Your State NRS Policies and Procedures

Your state has now implemented the NRS for several years and probably has already implemented many of the required policies and procedures. Some of these policies, however, may have been overlooked, implemented poorly or may not be working. The evaluation form at the end of the chapter will help you analyze and assess your state NRS policies and procedures and identify areas for improvement.

State NRS Policies and Procedures

The checklist on the evaluation form lists seven areas where your state should have policies and procedures. Each point on the checklist is explained below.

1. **Statewide assessment policy has been established.**

   Your state should have an assessment policy that describes the assessments local programs must use and the times when programs should pre- and posttest students. The assessments may be standardized tests or alternative assessment, if the assessment meets accepted psychometric standards for valid and reliable assessment, including empirically validated scoring rubrics with

high inter-rater reliability. Unvalidated rubrics and checklists, and locally developed tests, normally do not meet these criteria and are usually not acceptable. The state may have more than one assessment, such as a test for ESL students and a different test for ABE students, as long as there are clear procedures for when to use each test. The state policy should also designate when programs should pretest students and the calendar time or instructional hours when programs should posttest students. The policy should also clearly state that programs are to use a different form of the same assessment for pre- and posttesting.

2. **Follow-up methodology has been established.**

   The state must determine a methodology for collecting the NRS follow-up measures of entered employment, retained employment, attainment of a secondary credential and entry into postsecondary education. States must use data matching or a follow-up survey, or both methods to collect these measures. For example, a state may use the survey for employment measures and data matching to determine which students passed the GED tests. The survey must include all local programs, although the state or a third-party may conduct it.

3. **Policy on NRS optional measures has been established.**

   If the state decides to collect any or all of the NRS optional measures, state policy should clearly identify these measures and define them consistently with NRS definitions. The policy should also state the methodologies for collecting these optional measures, which may include survey, data matching or direct report from students while they are enrolled.

4. **State has ongoing training and technical assistance to local programs on data collection, reporting and use.**

   Since local adult education program staff members collect NRS data, they must fully understand policies and procedures if they are to produce quality data. It is thus critical to the success of the NRS that states provide training to teachers and other local staff involved in collecting and reporting data. This training should be ongoing, so that training is available for new staff. Critical topics for training include definitions of measures, completing reporting forms, conducting assessments and follow-up methods. While training should cover the general procedures and methods of the NRS, additional training on the importance of data and how to use it is likely to increase data quality. When local staff can see how to use data for their own purposes, their data collection activities will be more meaningful and they are likely to take more care in collecting them.

5. **Data reporting timelines and formats have been established.**

   Your state should have requirements for local programs to report data according to a fixed, regular schedule. Programs should submit data to a central source, such as the state or district, according to this schedule. State reporting periods for local programs should be monthly or quarterly, for if the time lag for reporting data is too long, the data will not be reported completely, as staff will have a tendency to put off data reporting until the deadline. The result will be a high degree of missing and possibly false data. Another reason for frequent reporting is that errors or problems will be identified and can be corrected on an ongoing basis. If data were reported only once or twice a year, it would not be possible to identify errors before it was too late to correct them. Similarly, your state should specify the technical format in which data are to be submitted that is consistent with state reporting software. Otherwise you may waste time trying to work with incompatible database systems.

6. **A quality control system is in place to monitor and audit local data collection.**

   To verify the validity of data and ensure local program compliance with state data collection policies, your state should conduct frequent reviews of data, immediately after local programs submit it. Monitoring procedures should also include regular discussions with local data collection staff, either at state meetings or by telephone and e-mail, to discuss problems. To be most effective, monitoring should be proactive, non-punitive, and presented as a form of technical assistance. With this approach, local staff will be less likely to hide problems and cover up mistakes. Monitoring should also include at least occasional on-site auditing of data, discussed later in this chapter.

7. **State has software or technical standards for local data collection and state reporting.**

   To meet NRS reporting requirements, the state must have at a minimum, software that is capable of aggregating NRS data from all local programs and producing the seven required data tables for federal reporting. To report data to the state, local programs must have an individual student record database in a relational format. Your state must establish a state database system for local programs or provide to programs uniform technical standards for database development to allow state reporting. All software should also have the ability to produce edit reports and have error checking capabilities to identify missing and inconsistent data.

Indicators of State Performance

This review of the state role in the NRS may have made you rethink your state policies or may have uncovered omissions or other problems with your current policies. To evaluate further your state policies, you may wish to discuss these issues with state and local staff. You also should review local program data for clues on what may not be working.

Discuss with state staff. State staff members involved in data collection, NRS policy and training are likely to have insight about state policies and implementation and how well they are working. Talk to staff about state decisions regarding assessment, student follow-up and training to get a better understanding of how policies are perceived and implemented. For example, you might explore whether posttesting times are appropriate, whether local staff administers tests correctly or how to improve response rates to the follow-up survey. Discuss other possible options for improving any areas that are problematic.

Discuss with local staff. Since local staff members implement the policies by collecting the data, they can be the best informants about how policies are actually translated into procedures. Local staff can tell you what "really" happens when forms are completed and students assessed. You may get further insights by observing staff during student intake and goal setting or giving tests. Identify areas of strength and weakness and discuss with staff.

Review local program data. One of the best ways to identify problems is to review local data. Your review should include examining disaggregated data from all local programs separately. If you only look at state aggregated data (i.e., summary data from all local programs combined) you will miss important details and clues about what the data reflect. Tables you could examine include:

- The number and percentage of students who are pre-and posttested by type of student and when they are posttested.
- The percent of students who advance by level.
- The number and percent of students who achieve goals.
- Average attendance hours received by students and number of hours it took students to advance and achieve goals.

Review these tables critically by looking for patterns that raise a question or seem improbable, with numbers that seem unrealistically high or low. When examining pre- and posttest data, examine the average number of instructional hours students received when they were posttested to see whether this number conforms to state policy. Look at the percentage of students posttested by type of student to see which students are not posttested—and if the percentage posttested seems too high.

Similarly, examine data for students who advance a level to look for differences by student or program. For example, if it takes an average of 40 hours for students to advance a level in one program and 120 hours for students to advance from that same level in another program, you will want to look further to explain that difference. Looking at goal attainments will give you a hint about goal setting and follow-up policies. You might investigate why so few students have a goal of passing the GED in one program, compared to similar programs in your state.

Local Data Auditing

A more formal way to investigate local program adherence to state policies and to study data quality is to conduct a local program data audit. Like a financial audit, a data audit involves an onsite review of the actual data forms and files and verification of the accuracy and validity of the information on these forms. Often an independent, third party conducts the audit, such as an accounting firm or a compliance review agency within the state government. Since audits are costly and time consuming, most states are unable to conduct them frequently or for many programs. Nonetheless, your state should perform at least occasional data auditing of a sample of programs, since this type of review is the most accurate way to assess data validity at the local level. Findings from the audit will also identify technical assistance and training needs and can help prevent future problems.

The auditing process should include at least four procedures. First, the auditor should interview program staff involved in data collection on the procedures they follow, particularly on how staff deals with missing and incomplete information, data entry procedures and reporting times. The auditor should also review the program's assessment and follow-up procedures to ensure they comply with state policy.

Second, the auditor should draw a random sample of student records to examine for completeness and accuracy. The sample size must be large enough to make inferences about the program overall and to accommodate the expected high percentage of students whom you will not be able to reach. The auditor should compare the written records and information on forms of the selected students with information that is in the program's management information system to ensure correspondence between the sources. This review will inform you about whether staff completes forms fully and accurately and whether there are problems transferring information on forms to the program's database.

Next, the auditor should contact the sample of students by telephone to obtain verification on key variables such as:

- Attendance—ask students to recall dates of active enrollment and approximate frequency of attendance;

- Tests and assessments—ask students to recall whether they took tests and assessments and when they took them; Goals set and reasons for attending classes;
- Goals met; and
- Satisfaction with services.

Your state should prepare a formal protocol and standard script for auditors to follow when making these calls to minimize interviewer bias.

As a fourth step in the auditing process, the auditor should verify attainment of follow-up goals with a secondary source, especially if the program uses a survey methodology. Compared to data matching, surveys are more likely to elicit socially desirable responses. For example, students may inaccurately claim to have obtained a job or passed the GED tests because they may believe that attaining these goals is expected of them. The auditor should contact a sample of employers to verify that the student is or was employed, should review GED data to verify the claims of those students who claimed to pass the tests, and check enrollment at community colleges to see whether students who claimed to enter postsecondary programs actually enrolled.

The cost and time of conducting a full-scale audit may make the process impractical on a large scale for many states. However, auditing allows the state to determine data quality and validity with a higher degree of accuracy than any other verification. Consequently, it is an indispensable part of the data collection process and should be incorporated in some way into state data quality verification systems.

Case Study #6 : Local Program Auditing

The Massachusetts Department of Education (MDOE) recently began implementing local audit procedures to ensure local programs' data collection is reliable and valid. MDOE recently conducted its first audit and plans to conduct others by selecting programs randomly or selecting programs that indicate having performance data that appears to be too low or too high. The state uses an external auditing firm to maintain data confidentiality and independence.

Once a program is selected, the auditor informs local program personnel of the process, what is expected of them, and how confidentiality issues are handled. A month is then set for the audit.

The auditor selects a random sample of student records that is large enough to support findings and takes into account the expected large percentage of students who will be unable to be reached. Using a standard set of questions developed by MDOE, the auditor contacts students by telephone to verify data entered in the state database system, including attendance (the students' recollections of period of active enrollment and the frequency of attendance), goals set, goals attained and satisfaction with the services received. If a student cannot be reached, a message is left indicating a time for a return phone call. If the person cannot be reached via phone, a letter is sent. The auditor has two weeks to complete all contacts and interviews with students. The auditing process also includes using a data match with the GED database to determine if there are any false positives or false negatives among students who had a goal of passing the GED tests.

The auditor provides a preliminary report to MDOE within one week of completion of student contacts. MDOE has one week to provide the auditor with any questions, comments or concerns about the report. The auditor then submits a final report not more than three weeks after student contacts are completed. Local program staff, the auditor and MDOE hold a final meeting to discuss the report and any future recommendations related to the accuracy, timeliness and quality of the program's data collection and recording processes.

When conducting audits, MDOE offers the following suggestions:

- Inform students, preferably at intake, that they may be contacted to confirm the nature and quality of the services they receive.

- To improve response rate, identify any special conditions for contacting students who previously articulated limits on being contacted and work out protocols for such contacts.

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Sample Data Table #9
State Policy: ABE Beginning Literacy Student's Pre- and Posttest Scores by Program

Program	Number of Students	Number taking Pretest	Percent taking Pretest	Number taking Posttest	Percent taking Posttest	Average Total Attendance Hours
Program 1	210	191	91%	111	**53%**	62
Program 2	141	**180**	**128%**	51	36%	**87**
Program 3	369	306	83%	133	36%	55
Program 4	450	360	80%	149	33%	65
Program 5	272	**272**	**100%**	101	37%	71
Program 6	325	163	**50%**	20	**6%**	**17**

Potential Problems

- Program 2 reports more students taking the pretest than are enrolled in the program. One of these values is incorrect.
- Program 5 reports 100% of students pretested, which should be checked.
- Program 6 reports that a very small percentage of students was pre- and posttested. This data should be verified, and may either indicate data entry errors or that data collection practices in this program need to be improved.
- The percent of students posttested is extreme for Program 1 and Program 6, 52% seems high and 6% is low. Both values should be checked.
- The total average attendance hours for Programs 1 and 6 should be checked. The values are low for Program 6 and high for Program 2.
- The data from Programs 2 and 6 contain questionable data with apparent errors. All data from these programs should be checked until the data collection practices can be improved.

Sample Data Table #10
State Policy: Further Investigation of Programs with High Error Rates from Sample Table #9

	Number Students	Number taking Pretest	Percent taking Pretest	Number taking Posttest	Percent taking Posttest	Average Total Attendance Hours
Program 2- Overall	141	180	128%	51	36%	87
Teacher 1	77	**127**	**165%**	29	38%	**164**
Teacher 2	24	21	88%	8	33%	52
Teacher 3	40	32	80%	14	35%	45
Program 6- Overall	325	163	50%	20	6%	17
Teacher 1	125	64	51%	20	16%	13
Teacher 2	57	26	46%	0	—	—
Teacher 3	46	21	46%	0	—	21
Teacher 4	61	30	49%	0	—	—
Teacher 5	36	22	61%	0	—	—

Potential Problems:

- The data problems for Program 2 come from Teacher 1's class. The number of students taking the pretest (127) is incorrectly reported, and is more than the number enrolled (77), as is the average total attendance hours (164). The other teachers' data seem fine. This problem may be due to this teacher not understanding the data reporting procedures or simply making data entry mistakes.
- The problems for Program 6 are more widespread and program wide. Four of the 5 teachers have missing data and none of the teachers pretested over 61% of enrolled students. Only one teacher reported posttest data. The average total hours for this program are also very low. This program needs to be evaluated and staff need to be retrained in data collection procedures.

STATE NRS POLICIES AND PROCEDURES EVALUATION

A. Describe Your State NRS Policies and Procedures

Describe your state's assessment, follow-up and reporting policies, software requirements for local and state data analyses, and training and technical assistance offered to local programs. Also describe your procedures for monitoring and oversight of local data collection and how your state reports are prepared and reviewed. Then complete the checklist in Part B.

B. Rate Your State NRS Policies and Procedures

State NRS Policies and Procedures Checklist	Have in place	Have, but need resources	Have, needs change	Do not have
1. Statewide assessment policy has been established.				
2. Follow-up methodology has been established.				
3. Policy on NRS optional measures has been established.				
4. State has ongoing training and technical assistance to local programs on data collection, reporting and use.				
5. Data reporting timelines and formats have been established.				
6. A quality control system is in place to monitor and audit local data collection.				
7. State has software or technical standards for local data collection and state reporting.				

Evaluate Your State NRS Policies and Procedures

Identify the aspects of your state's NRS policies and procedures that you are not performing well. Describe your areas of strength and weakness, by reviewing the areas you rated as "needs change" and "do not have." If you checked any areas as "need resources," determine what resources you are lacking and how you might get them. Also, review the accuracy and completeness of your description of state policies and procedures in Part A on the form. After discussing issues with staff, develop a plan for improving weaknesses.

Areas of Misunderstanding or Lack of Knowledge

Areas of Strength

Areas of Weakness

Plan for Improvement

Problem	Plan for Correcting Problem	People Responsible for Correcting	Timeline for Completing Corrections
1.			
2.			
3.			

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